ELECTRICAL SYSTEM

SECTION EL

When you read wiring diagram:
- **Read GI section, "HOW TO READ WIRING DIAGRAMS".**

CONTENTS

CONTENTS (Cont'd)

WIRING DIAGRAM REFERENCE CHART

ECCS (Ignition system)	EF & EC SECTION
AUTOMATIC TRANSMISSION CONTROL SYSTEM, SHIFT LOCK SYSTEM	AT SECTION
ACTIVE SUSPENSION	FA SECTION
ANTI-LOCK BRAKE SYSTEM, TRACTION CONTROL SYSTEM	BR SECTION
ELECTRONICALLY CONTROLLED POWER STEERING SYSTEM	ST SECTION
SRS "AIR BAG"	RS SECTION
HEATER AND AIR CONDITIONER	HA SECTION

Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

The Supplemental Restraint System "Air Bag" and "Seat Belt Pre-tensioner", used along with a seat belt, help to reduce the risk or severity of injury to the driver and front passenger in a frontal collision. The Supplemental Restraint System consists of air bag modules (located in the center of the steering wheel and on the instrument panel on the passenger side), seat belt pre-tensioners, a diagnosis sensor unit, warning lamp, wiring harness and spiral cable. Information necessary to service the system safely is included in the **RS section** of this Service Manual.

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system.**
- **All SRS electrical wiring harnesses and connectors are covered with yellow outer insulation. Do not use electrical test equipment on any circuit related to the SRS.**

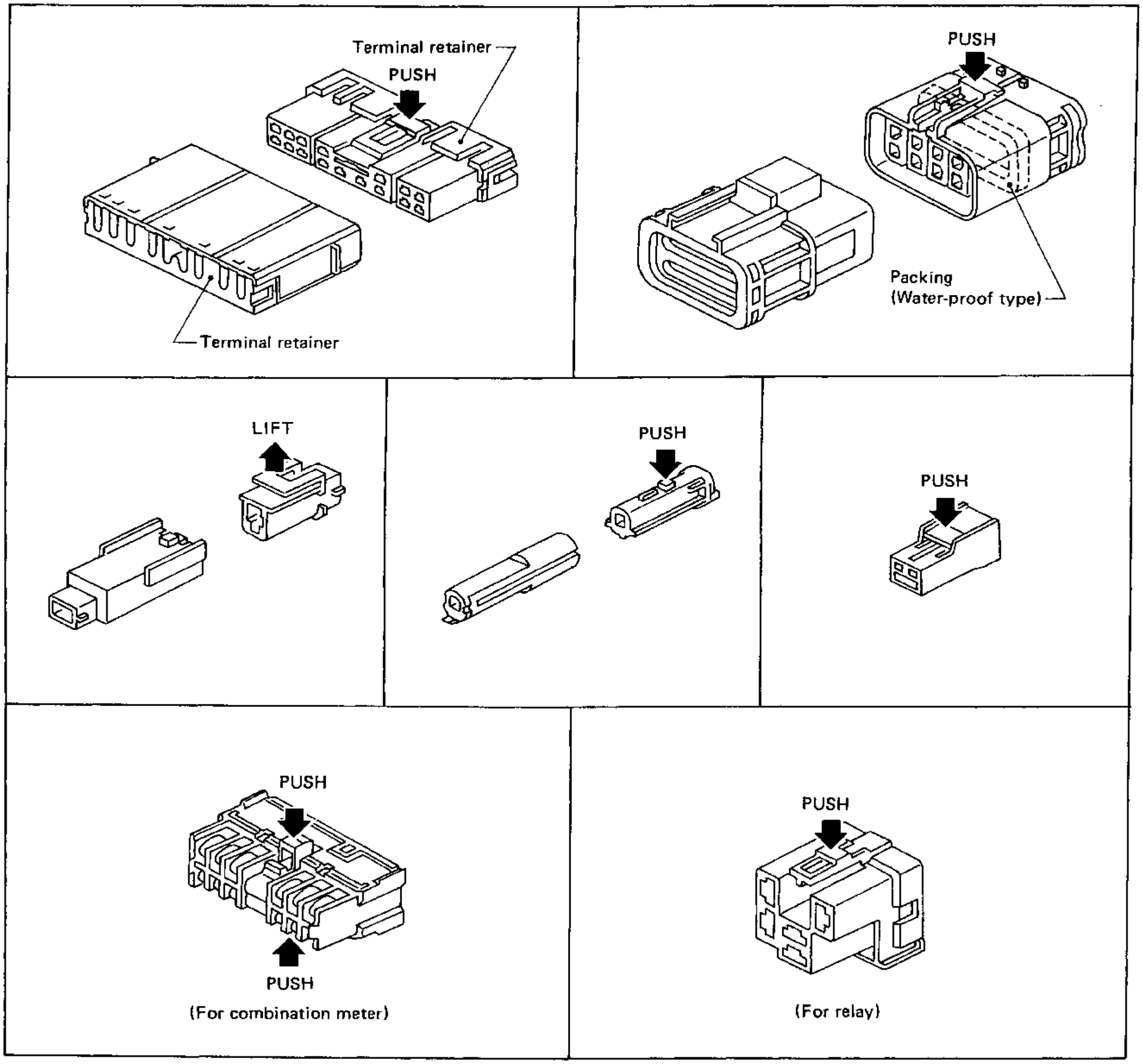
Description

HARNESS CONNECTOR

- All harness connectors have been modified to prevent accidental loosing or disconnection.
- The connector can be disconnected by pushing or lifting the locking section.

CAUTION:
Do not pull the harness when disconnecting the connector.

[Example]

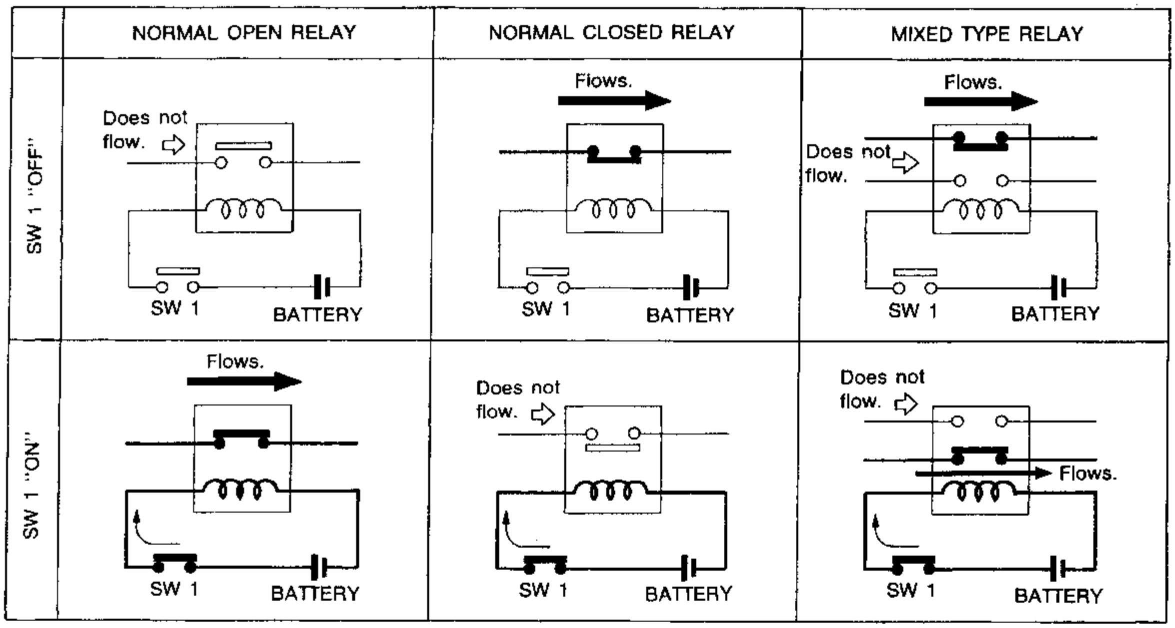


SEL769D

Description

NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

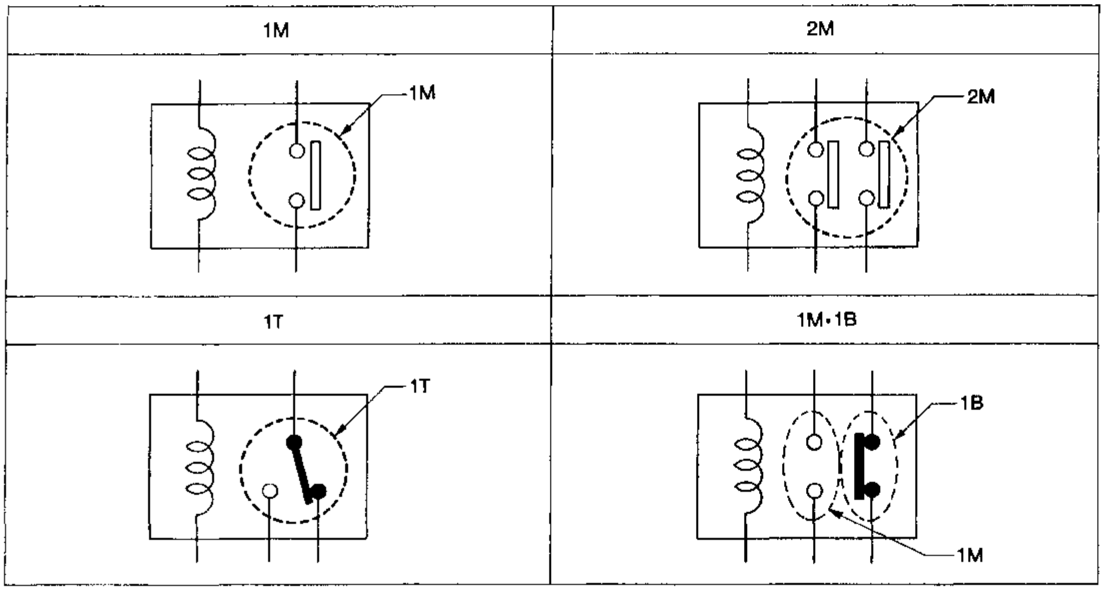
Relays can mainly be divided into three types: normal open, normal closed and mixed type relays.



SEL881H

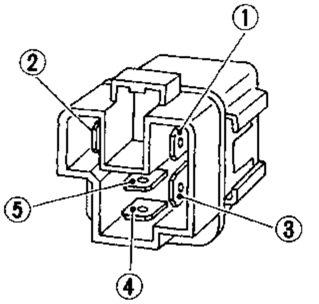
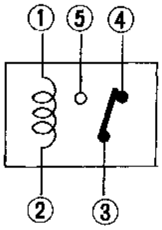
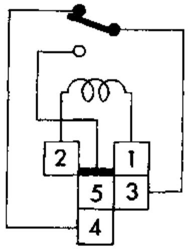
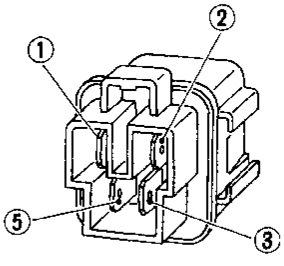
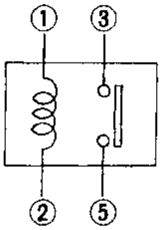
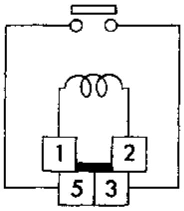
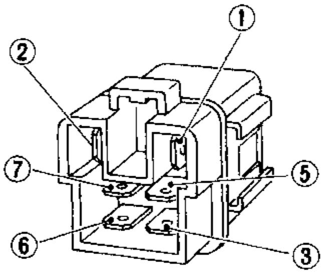
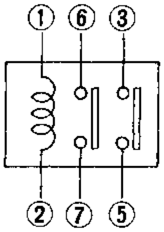
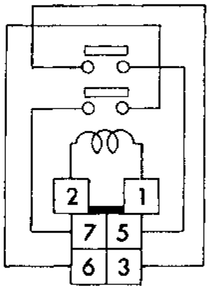
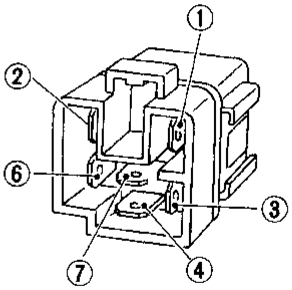
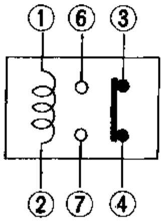
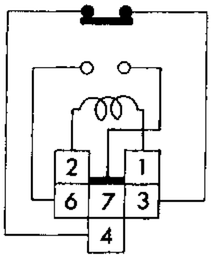
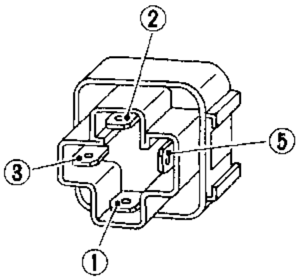
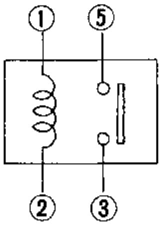
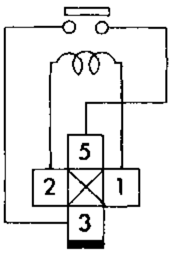
TYPE OF STANDARDIZED RELAYS

1M	1 Make	2M	2 Make
1T	1 Transfer	1M·1B	1 Make 1 Break



SEL882H

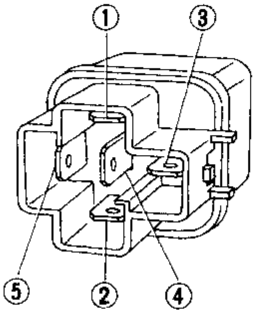
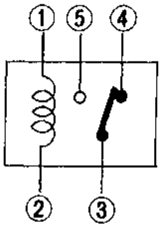
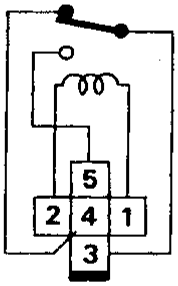
Description (Cont'd)

Type	Outer view	Circuit	Connector symbol and connection	Case color
1T				BLACK
1M				BLUE or GREEN
2M				BROWN
1M•1B				GRAY
1M				BLUE

The arrangement of terminal numbers on the actual relays may differ from those shown above.

SEL871SA

Description (Cont'd)

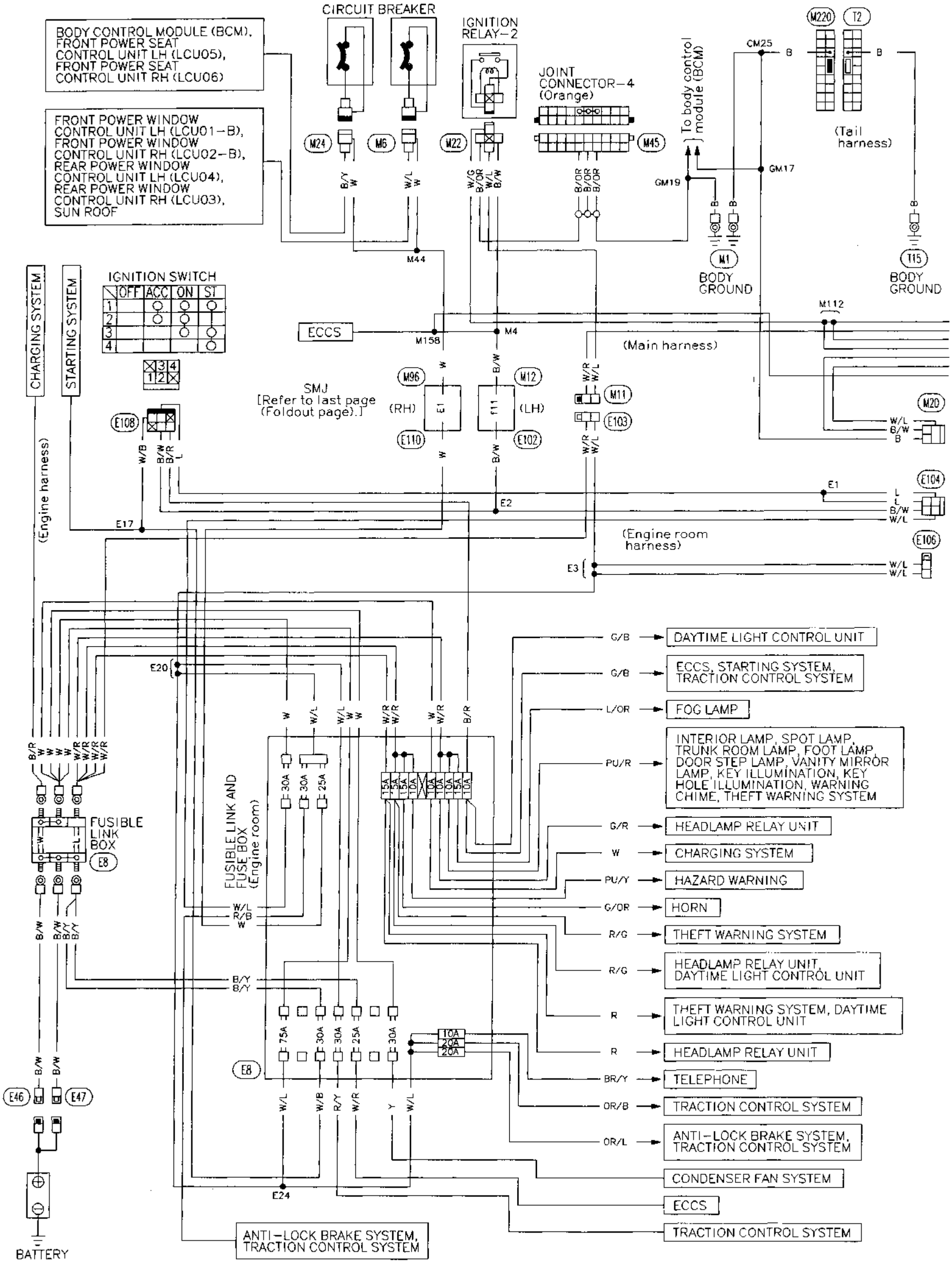
Type	Outer view	Circuit	Connector symbol and connection	Case color
1T				BLACK

The arrangement of terminal numbers on the actual relays may differ from those shown above.

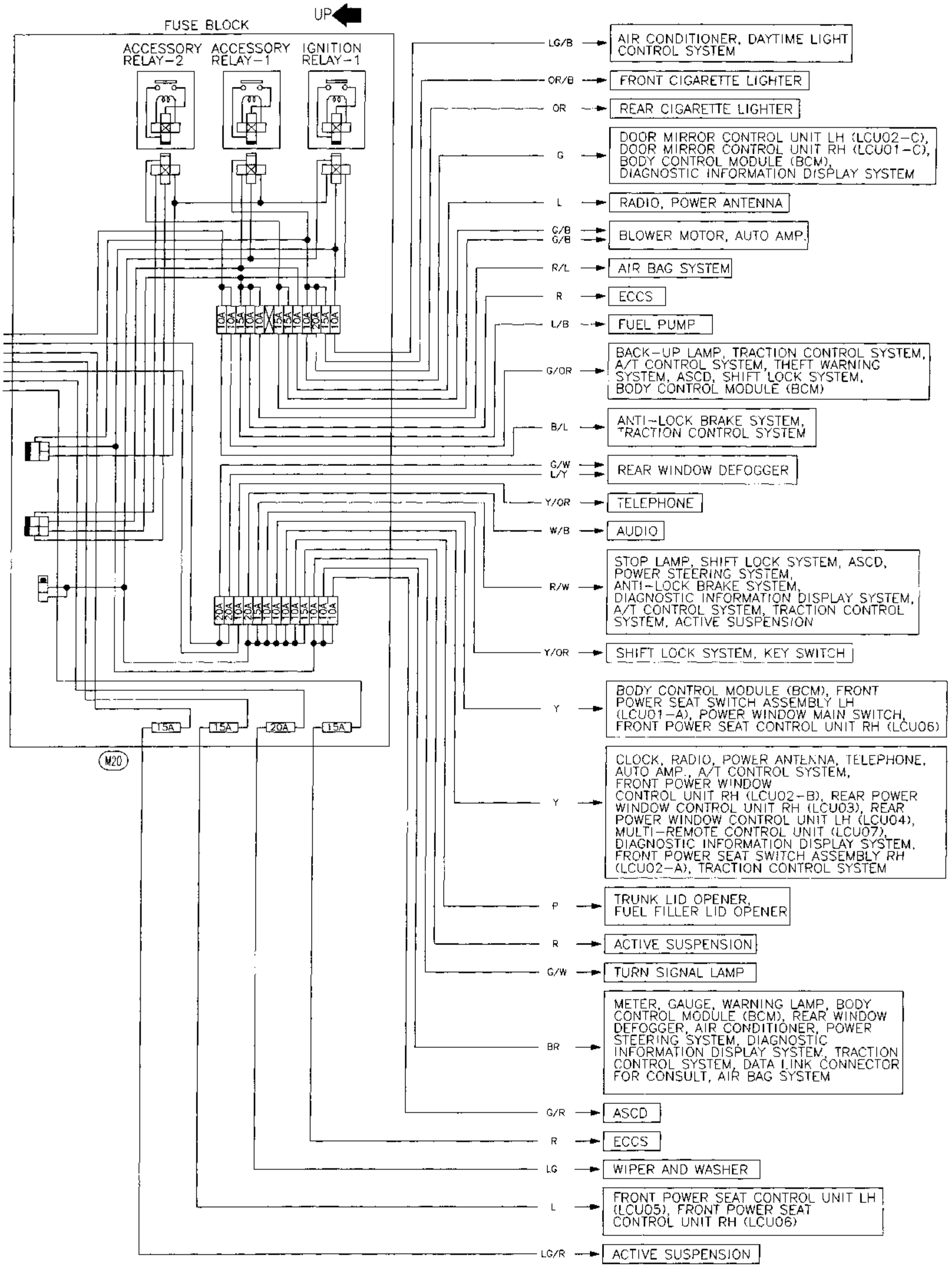
MEL202BA

GI
MA
EM
LC
EF & EC
FE
AT
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

Wiring Diagram

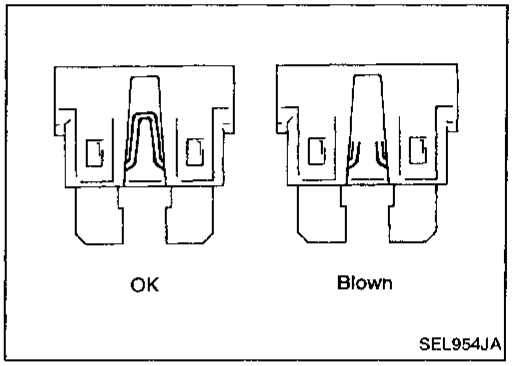


Wiring Diagram (Cont'd)



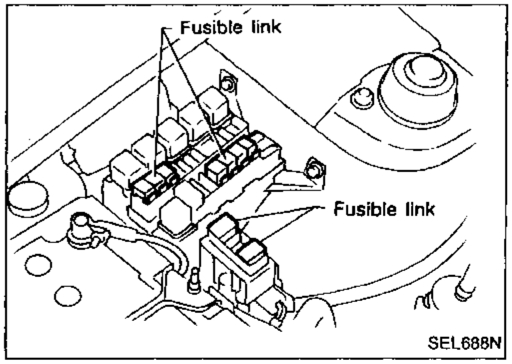
MEL829D

GI
MA
EM
LC
EF & EC
FE
AT
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX



Fuse

a. **If fuse is blown, be sure to eliminate cause of problem before installing new fuse.**
b. **Use fuse of specified rating. Never use fuse of more than specified rating.**
c. **Do not partially install fuse; always insert it into fuse holder properly.**
d. **Remove fuse for clock if vehicle is not used for a long period of time.**

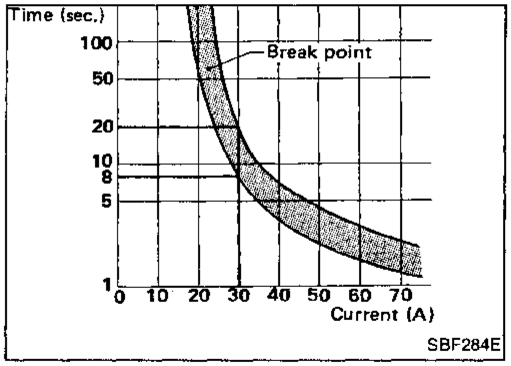


Fusible Link

A melted fusible link can be detected either by visual inspection or by feeling with finger tip. If its condition is questionable, use circuit tester or test lamp.

CAUTION:

a. **If fusible link should melt, it is possible that a critical circuit (power supply or large current carrying circuit) is shorted. In such a case, carefully check these circuits and eliminate cause of problem.**
b. **Never wrap outside of fusible link with vinyl tape.**
Important: Never let fusible link touch any other wiring harnesses, vinyl or rubber parts.



Circuit Breaker

For example, when current is 30A, the circuit is broken within 8 to 20 seconds.

Circuit breakers are used in the following systems.

- Power window (LAN)
- Power door lock (LAN)
- Electric sun roof
- Power seat (LAN)

CAUTION:

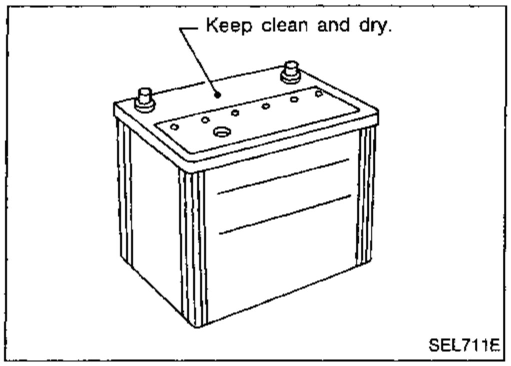
a. **If it becomes necessary to start the engine with a booster battery and jumper cables, use a 12-volt booster battery.**

b. **After connecting battery cables, ensure that they are tightly clamped to battery terminals for good contact.**

c. **Never add distilled water through the hole used to check specific gravity.**

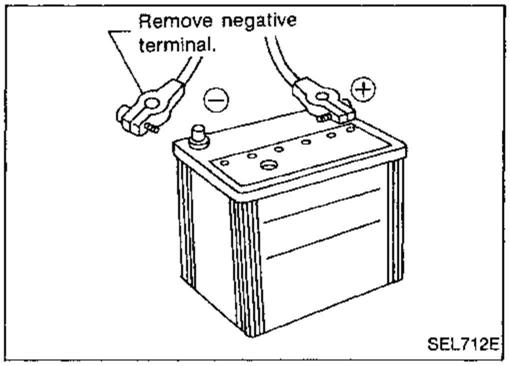
How to Handle Battery

METHODS OF PREVENTING OVER-DISCHARGE

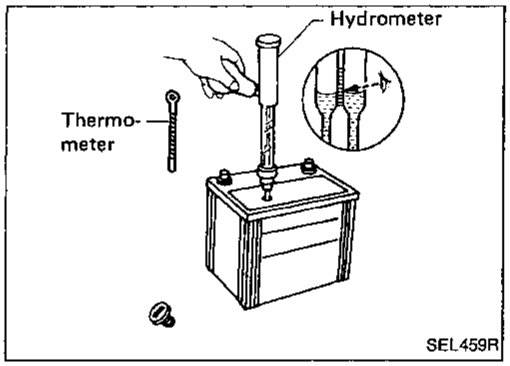


The following precautions must be taken to prevent over-discharging a battery.

- The battery surface (particularly its top) should always be kept clean and dry.
- The terminal connections should be clean and tight.
- At every routine maintenance, check the electrolyte level.



- When the vehicle is not going to be used over a long period of time, disconnect the negative battery terminal. (If the vehicle has an extended storage switch, turn it off.)



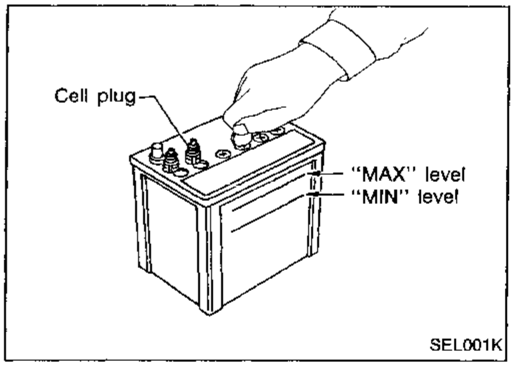
- Check the charge condition of the battery.
  Periodically check the specific gravity of the electrolyte. Keep a close check on charge condition to prevent overdischarge.

CHECKING ELECTROLYTE LEVEL

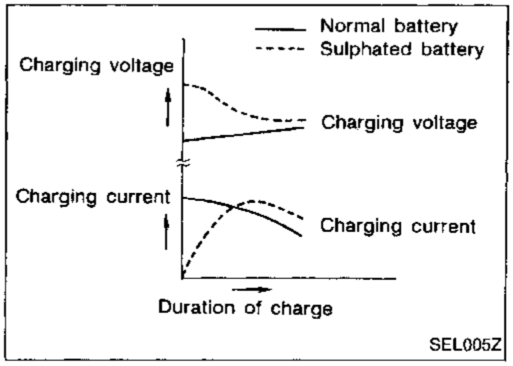
WARNING:

Do not allow battery fluid to come in contact with skin, eyes, fabrics, or painted surfaces. After touching a battery, do not touch or rub your eyes until you have thoroughly washed your hands. If the acid contacts the eyes, skin or clothing, immediately flush with water for 15 minutes and seek medical attention.

How to Handle Battery (Cont'd)



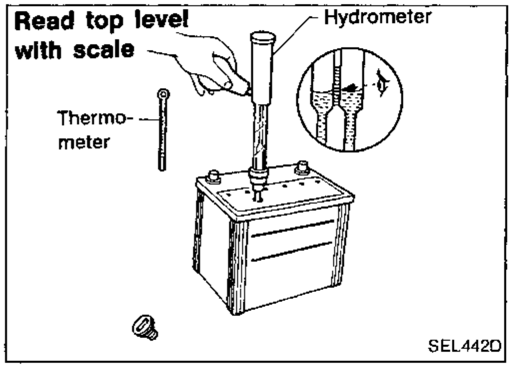
- Remove the cell plug using a suitable tool.
- Add distilled water up to the MAX level.



SULPHATION

A battery will be completely discharged if it is left unattended for a long time and the specific gravity becomes less than 1.100. This may result in sulphation on the cell plates.

To find if a battery has been "sulphated", pay attention to its voltage and current when charging it. As shown in the figure at left, if the battery has been "sulphated", less current and higher voltage may be observed in the initial stages of charging.



SPECIFIC GRAVITY CHECK

Read hydrometer and thermometer indications at eye level.

- Use the chart below to correct your hydrometer reading according to electrolyte temperature.

Hydrometer temperature correction

Battery electrolyte temperature °C (°F)	Add to specific gravity reading
71 (160)	0.032
66 (150)	0.028
60 (140)	0.024
54 (130)	0.020
49 (120)	0.016
43 (110)	0.012
38 (100)	0.008
32 (90)	0.004
27 (80)	0
21 (70)	–0.004
16 (60)	–0.008
10 (50)	–0.012
4 (40)	–0.016
–1 (30)	–0.020
–7 (20)	–0.024
–12 (10)	–0.028
–18 (0)	–0.032

How to Handle Battery (Cont'd)

Corrected specific gravity	Approximate charge condition
1.260 - 1.280	Fully charged
1.230 - 1.250	3/4 charged
1.200 - 1.220	1/2 charged
1.170 - 1.190	1/4 charged
1.140 - 1.160	Almost discharged
1.110 - 1.130	Completely discharged

CHARGING THE BATTERY

CAUTION:

a. Do not "quick charge" a fully discharged battery.

b. Keep the battery away from open flame while it is being charged.

c. When connecting the charger, connect the leads first, then turn on the charger. Do not turn on the charger first, as this may cause a spark.

d. If battery electrolyte temperature rises above 60°C (140°F), stop charging. Always charge battery at a temperature below 60°C (140°F).

Charging rates:

Amps	Time
50	1 hour
25	2 hours
10	5 hours
5	10 hours

Do not charge at more than 50 ampere rate.

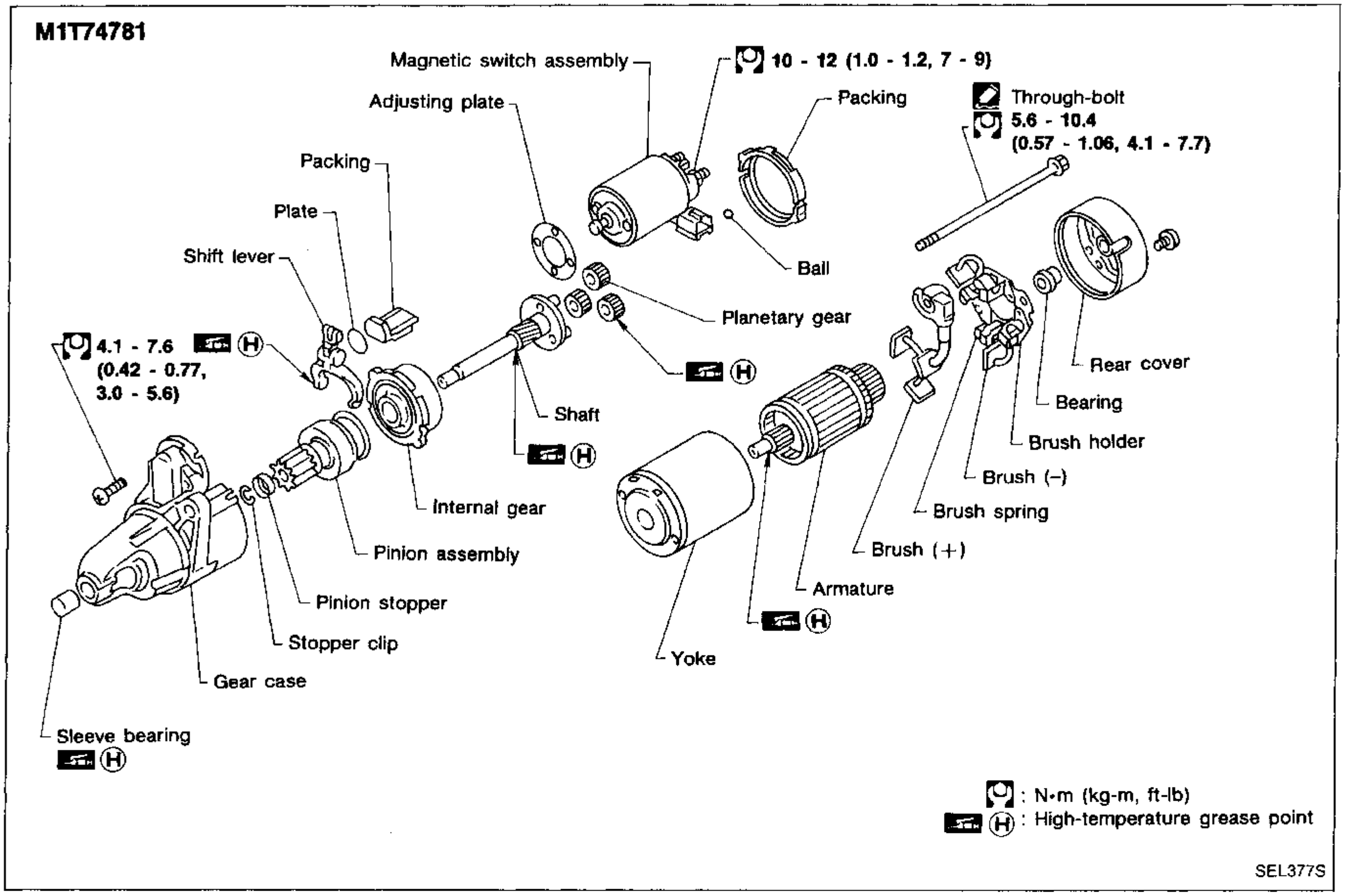
Note: The ammeter reading on your battery charger will automatically decrease as the battery charges. This indicates that the voltage of the battery is increasing normally as the state of charge improves. The charging amps indicated above refer to initial charge rate.

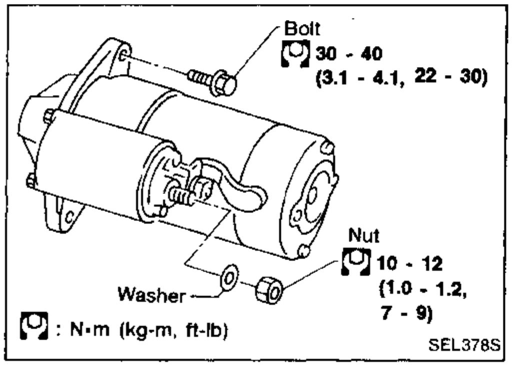
- **If, after charging, the specific gravity of any two cells varies more than .050, the battery should be replaced.**

Service Data and Specifications (SDS)

Type		95D31R
Capacity	V-AH	12-80
Cold Cranking Current (For reference value)	A	622

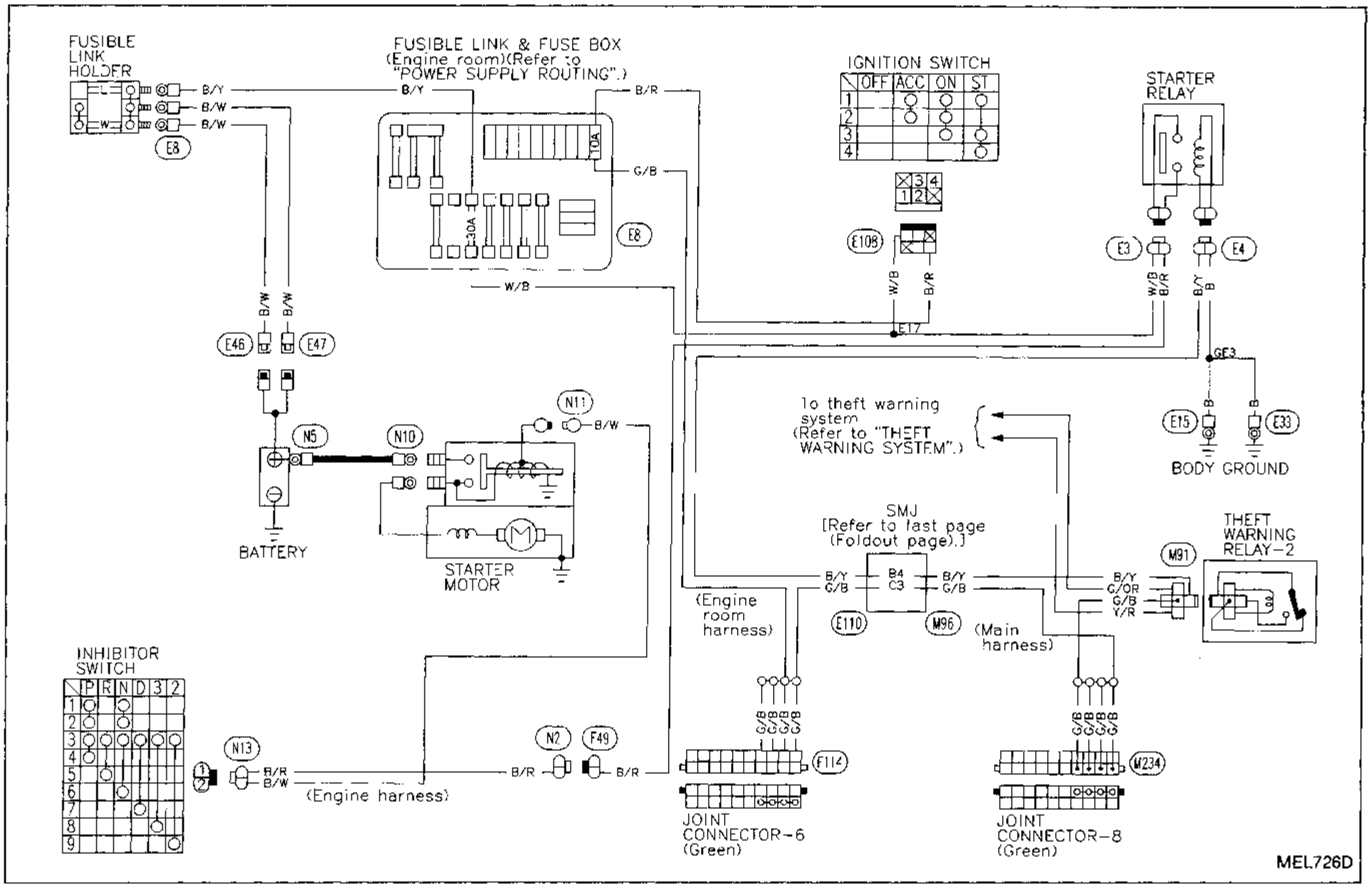
Construction





Removal and Installation

Wiring Diagram

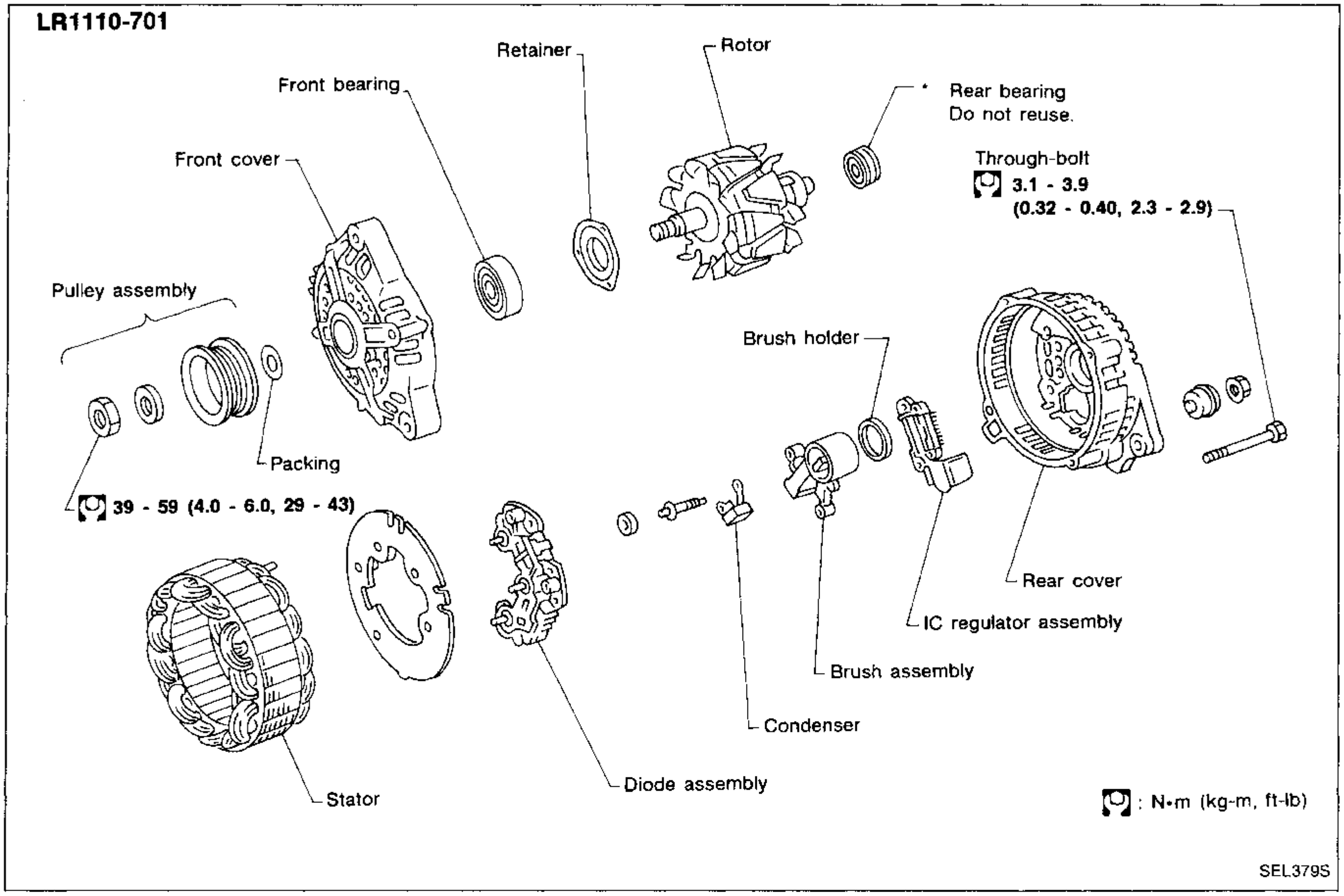


Service Data and Specifications (SDS)

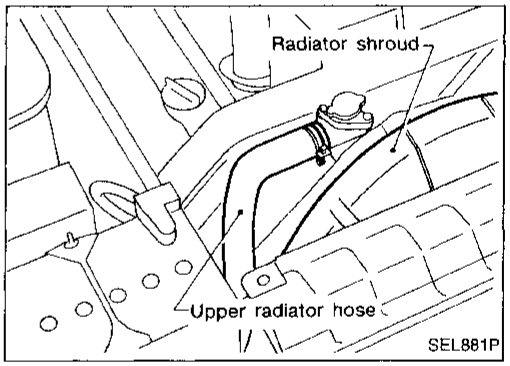
STARTER

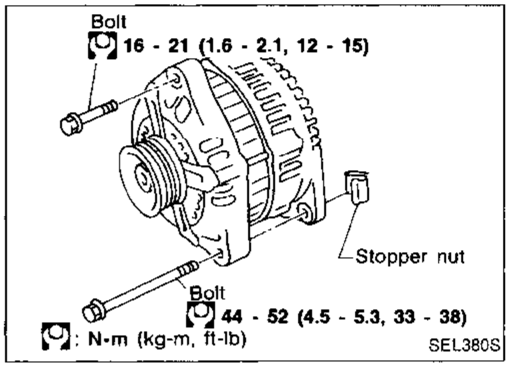
Type			M1T74781A
			MITSUBISHI make
			Reduction gear
System voltage		V	12
No-load	Terminal voltage	V	11.0
	Current	A	50 - 75
	Revolution	rpm	2,900 - 4,000
Minimum length of brush		mm (in)	12.0 (0.472)
Brush spring tension (With new brush)		N (kg, lb)	13.7 - 25.5 (1.4 - 2.6, 3.1 - 5.7)
Minimum diameter of commutator		mm (in)	28.8 (1.134)
Clearance between pinion front edge and pinion stopper		mm (in)	0.5 - 2.0 (0.020 - 0.079)
Clearance between bearing metal and armature shaft		mm (in)	Less than 0.2 (0.008)

Construction



***Rear bearing**
CAUTION:
Rear cover may be hard to remove because a ring is used to lock outer race of rear bearing. Be careful not to lose this ring during removal.





Removal and Installation

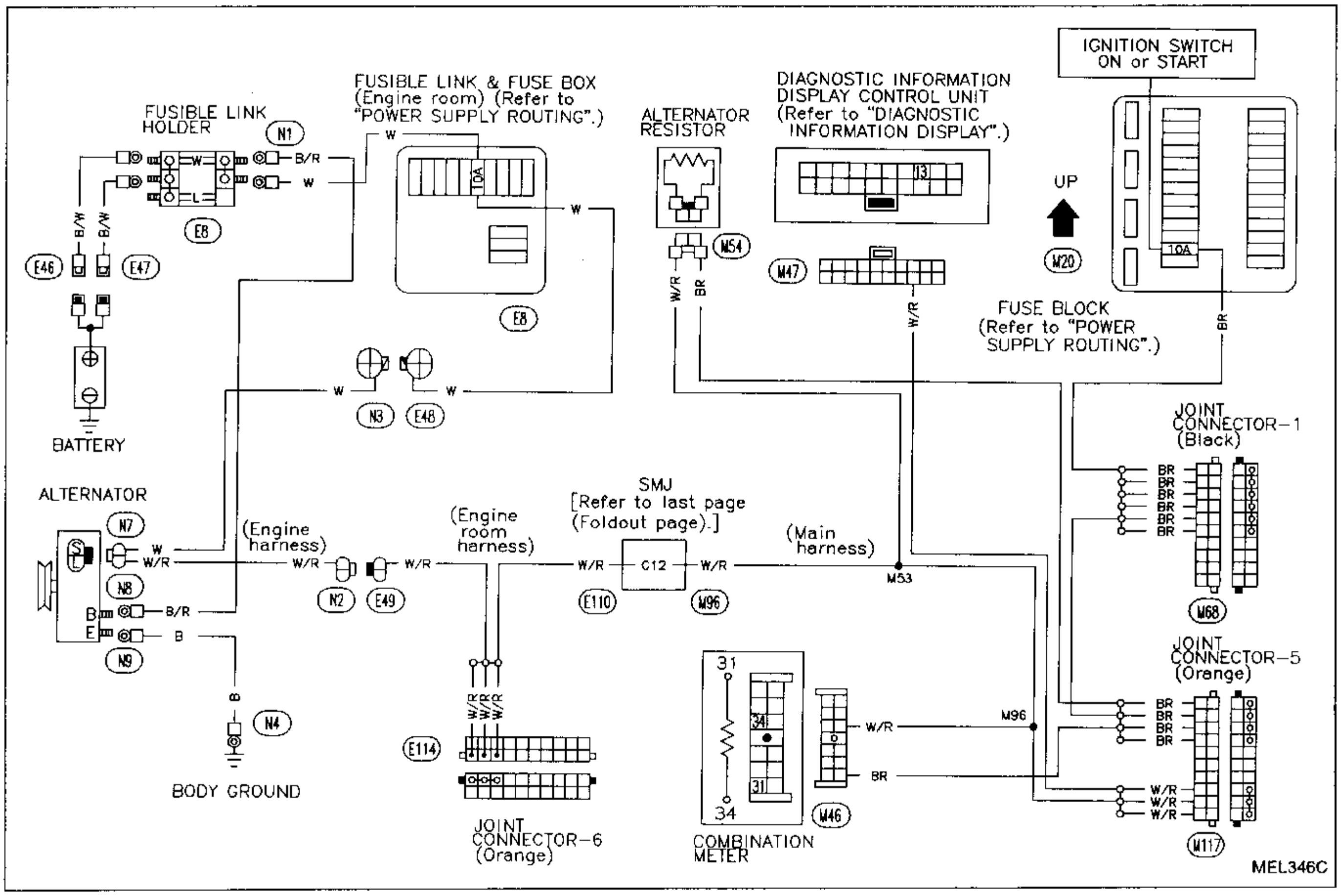
REMOVAL

1. Drain approximately one liter of coolant. Then remove radiator upper hose and radiator bracket.
2. Off set radiator, (Full-active suspension models) remove radiator shroud.
3. Remove cooling fan.
4. Remove alternator upper bracket.
5. Remove air conditioner pipe mounting bracket.
6. Remove idler pulley. Then remove belt.
7. Remove the two power steering cooler pipe mounting screws.
8. Remove alternator mounting bolt (through-bolt).
9. Remove harness heat shroud by pulling alternator to radiator side.

INSTALLATION

- Installation procedures is in reverse order of removal.

Wiring Diagram



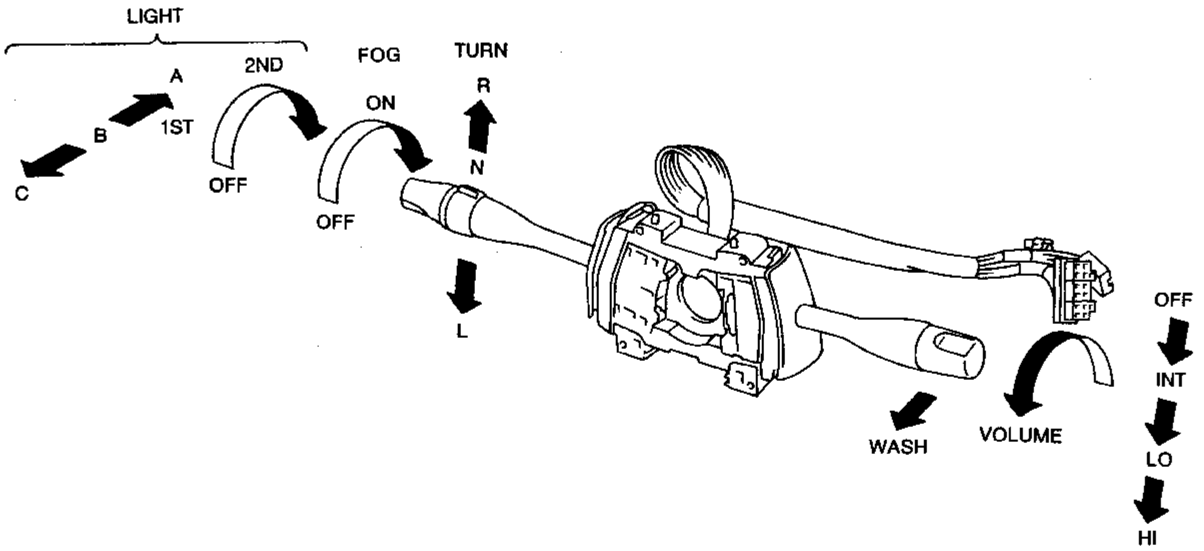
Service Data and Specifications (SDS)

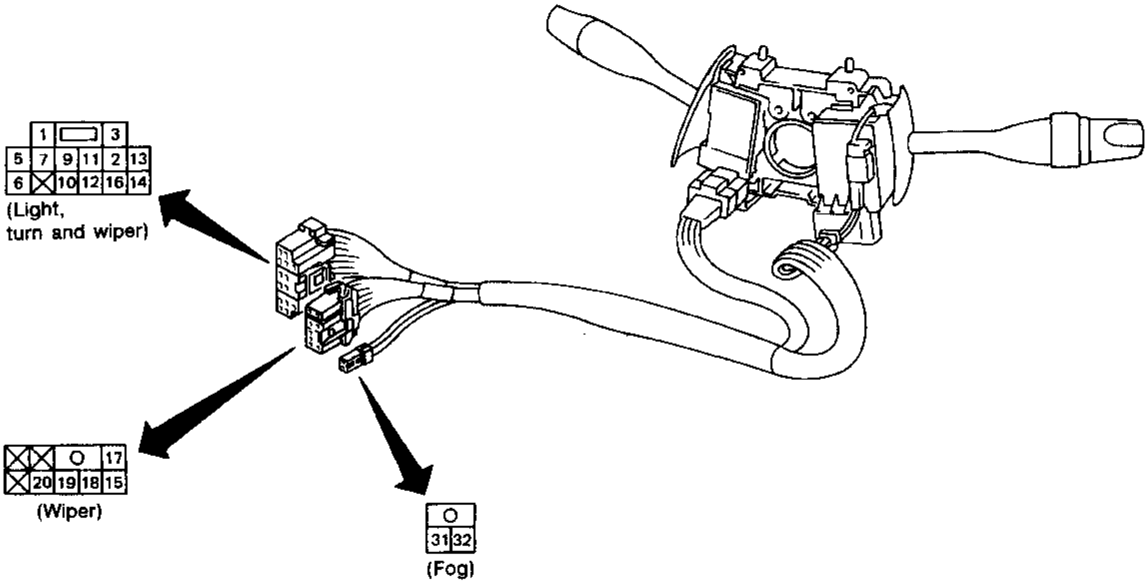
ALTERNATOR

Type		LR1110-701 HITACHI make
Applied engine		VH45DE
Nominal rating	V-A	12-110
Ground polarity		Negative
Minimum revolution under no-load (when 13.5 volts is applied)	rpm	Less than 950
Hot output current	A/rpm	More than 34/1,300 More than 82/2,500 More than 105/5,000
Regulated output voltage	V	14.1 - 14.7
Minimum length of brush	mm (in)	More than 6 (0.24)
Slip ring minimum outer diameter	mm (in)	More than 31.6 (1.244)
Rotor (field coil) resistance	Ω	2.4

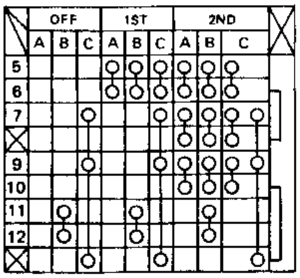
GI
MA
EM
LC
EF & EC
FE
AT
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

Combination Switch/Check



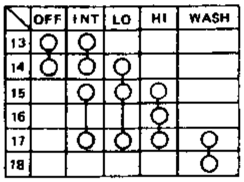


LIGHTING SWITCH



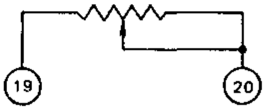
☒	OFF			1ST			2ND				☒
	A	B	C	A	B	C	A	B	C		
5				○	○	○	○	○	○		
6				○	○	○	○	○	○		
7			○			○	○	○	○	○	
☒							○	○	○		
9			○			○	○	○	○	○	
10							○	○	○		
11		○			○			○			
12		○			○			○			
☒			○			○				○	

WIPER SWITCH

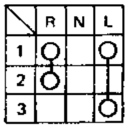


	OFF	INT	LO	HI	WASH
13	○	○			
14	○	○	○		
15		○	○	○	
16				○	
17		○	○	○	○
18					○

INTERMITTENT WIPER VOLUME



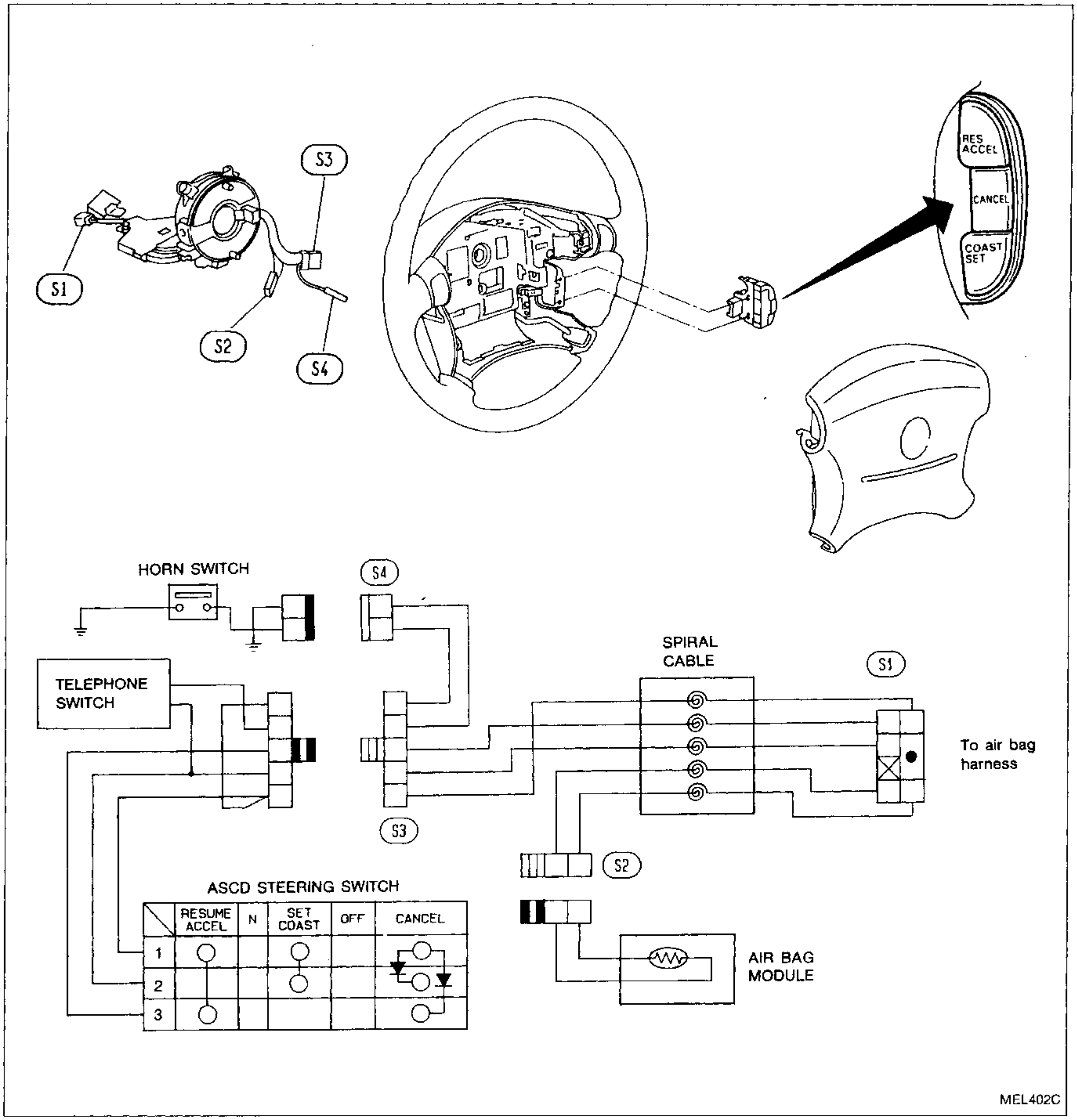
TURN SIGNAL SWITCH



	R	N	L
1	○		○
2	○		
3			○

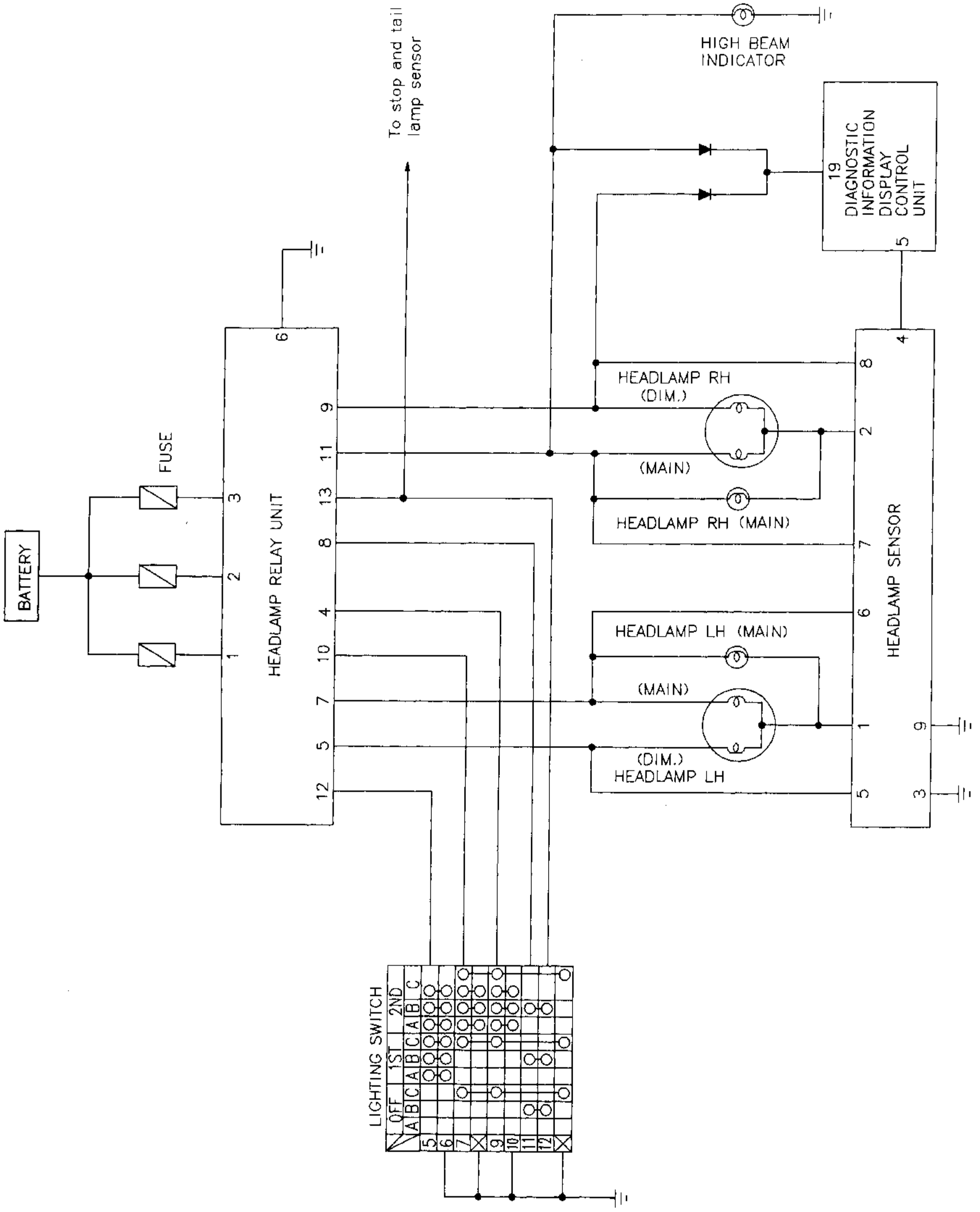
MEL393C

Steering Switch/Check



Schematic

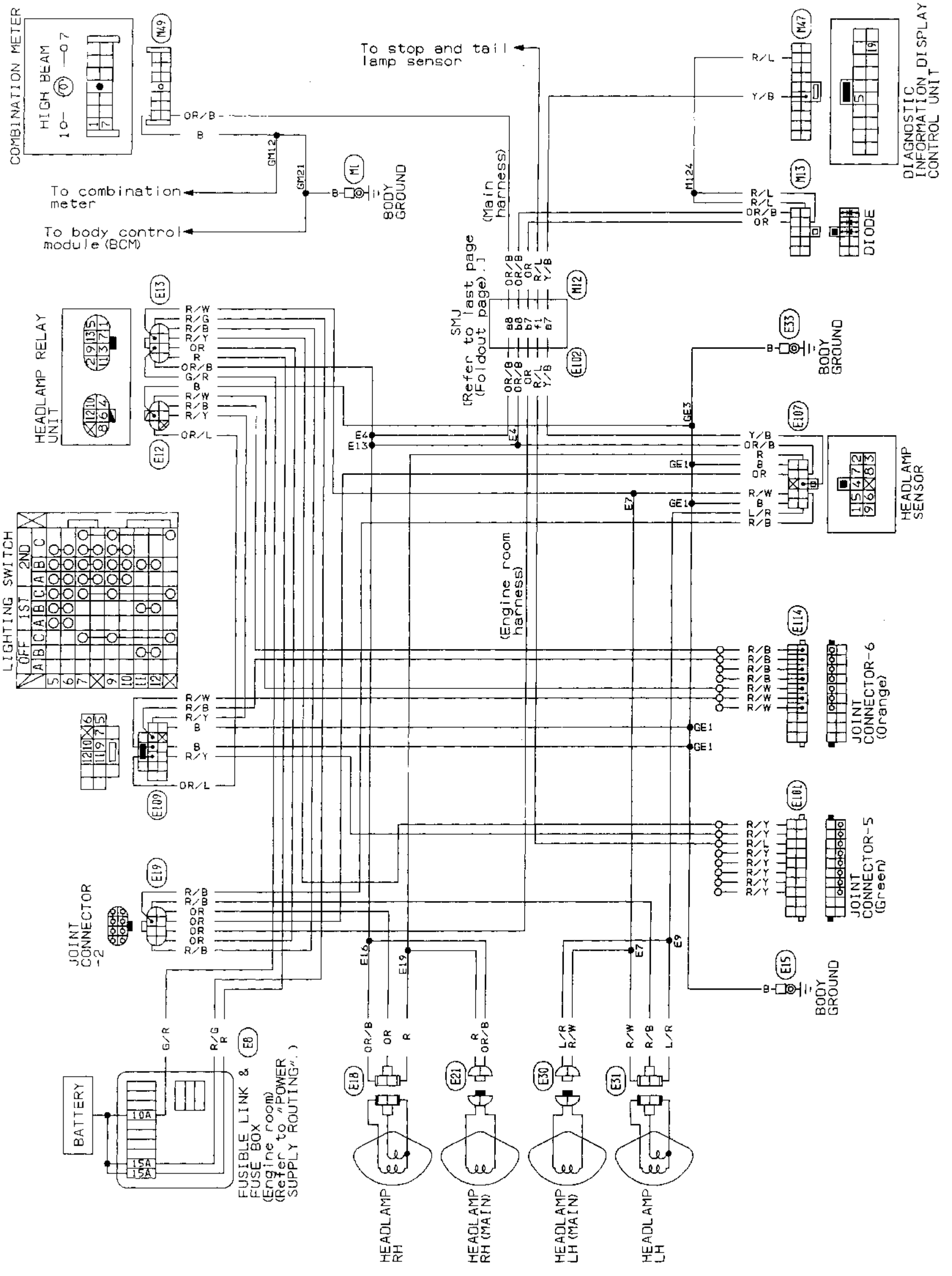
FOR U.S.A.



MEL347C

Wiring Diagram

FOR U.S.A.



MEL348C

Operation (Daytime light system for Canada)

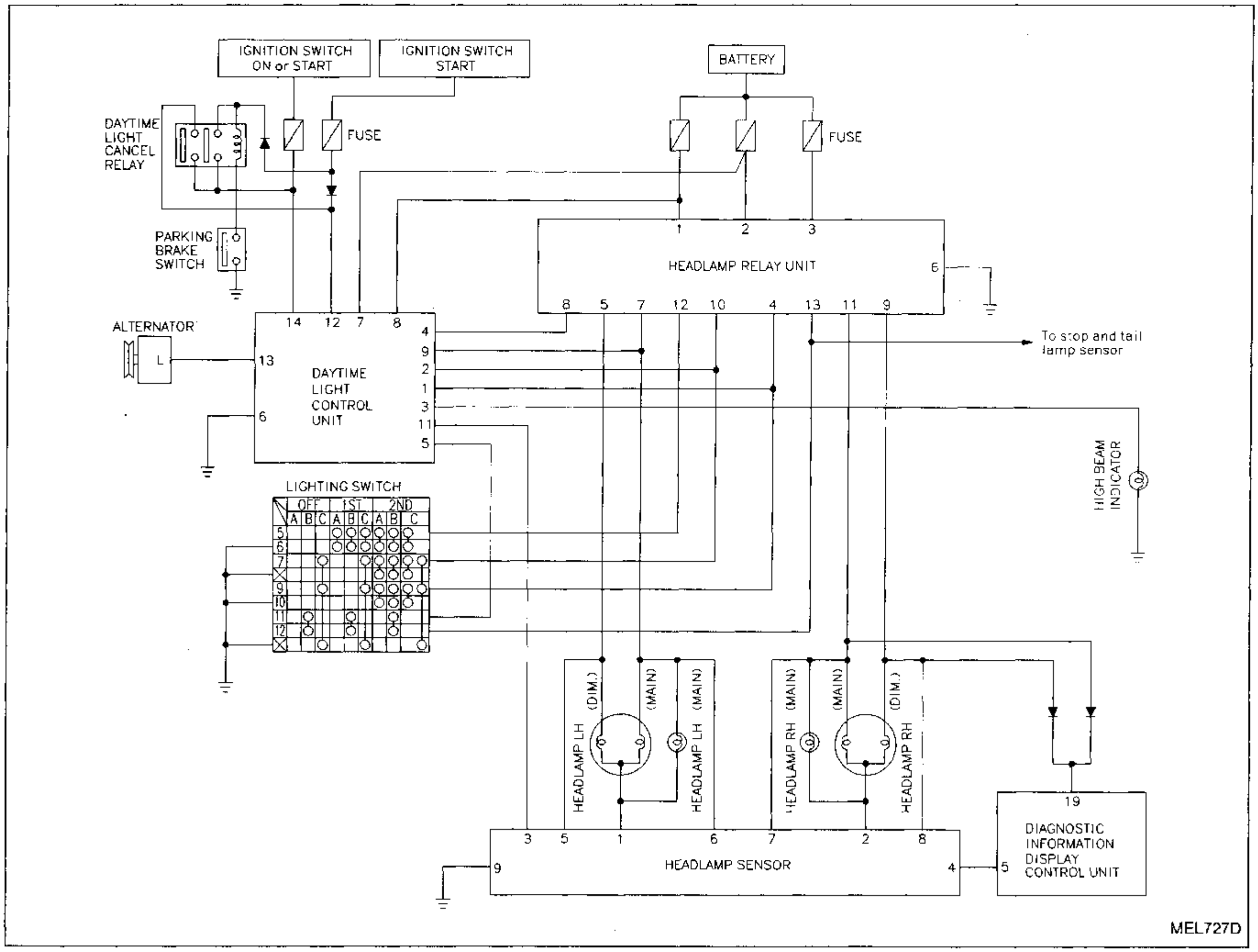
After starting the engine with the lighting switch in the "OFF" position or "1ST" position, the headlamp high beam automatically turns on. Lighting switch operations other than the above are the same as conventional light systems.

Engine		With engine stopped									With engine running								
Lighting switch		OFF			1ST			2ND			OFF			1ST			2ND		
		A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
Headlamp	High beam	X	X	O	X	X	O	O	X	O	△*	△*	O	△*	△*	O	O	X	O
	Low beam	X	X	X	X	X	X	X	O	X	X	X	X	X	X	X	X	O	X
Clearance and tail lamp		X	X	X	O	O	O	O	O	O	X	X	X	O	O	O	O	O	O
License and instrument illumination lamp		X	X	X	O	O	O	O	O	O	X	X	X	O	O	O	O	O	O

O : Lamp "ON"
X : Lamp "OFF"
△ : Lamp dims.
* : When starting the engine with the parking brake released, the daytime lamp will come ON.
When starting the engine with the parking brake pulled, the daytime lamp won't come ON.

Schematic

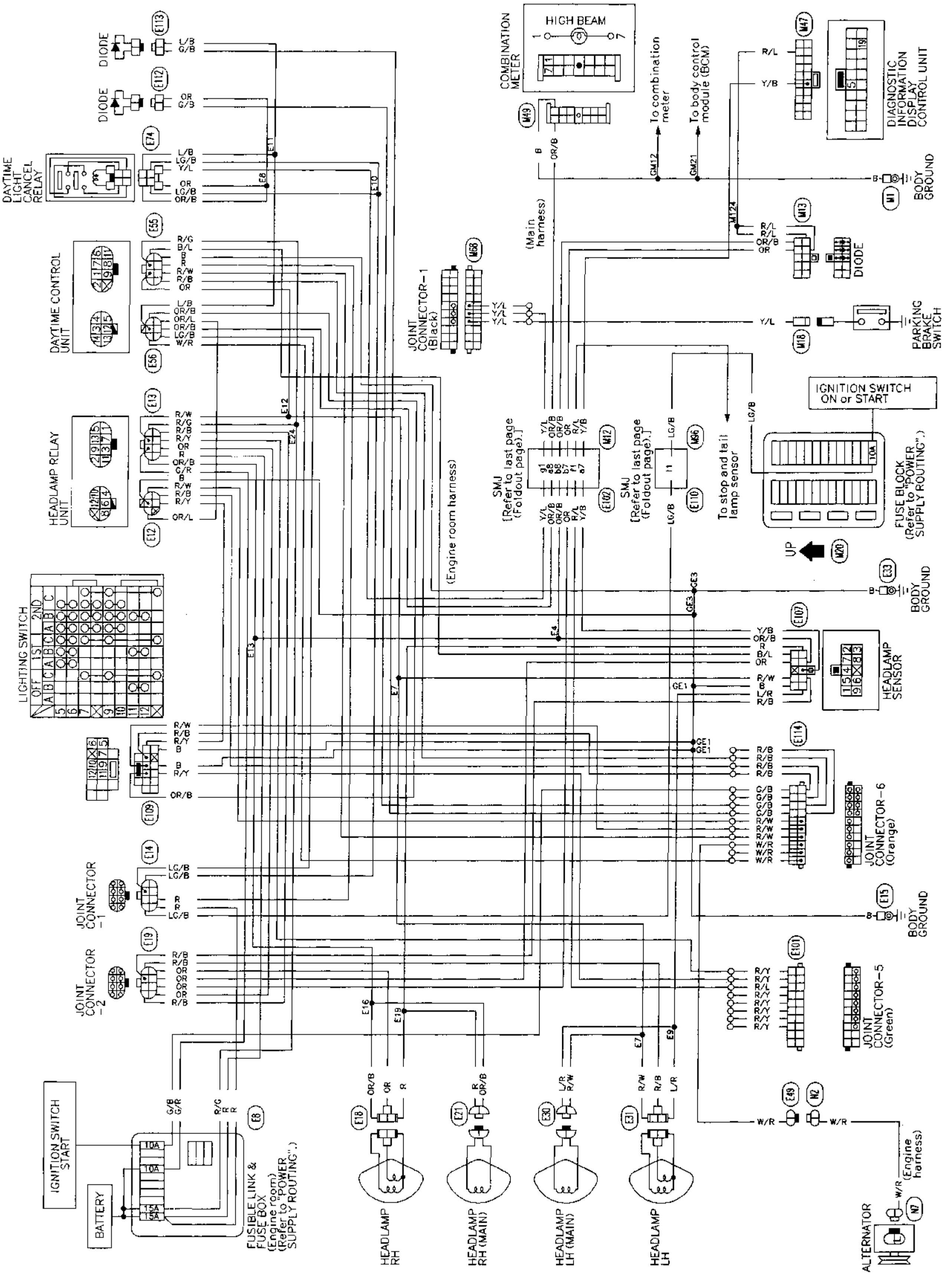
FOR CANADA



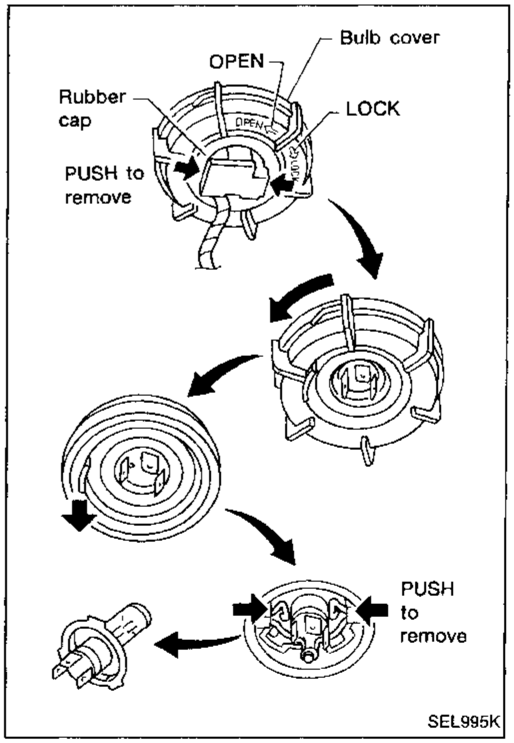
MEL727D

Wiring Diagram

FOR CANADA



MEL728D



Bulb Replacement

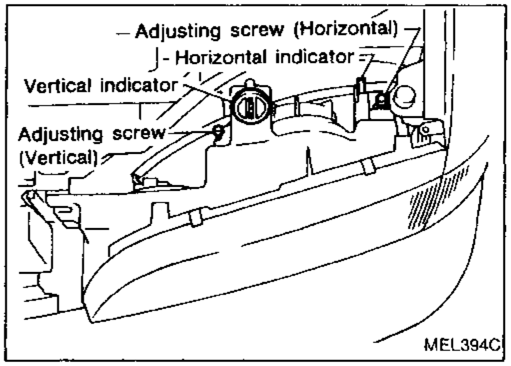
The headlamp is a semi-sealed beam type which uses a replaceable halogen bulb. The bulb can be replaced from the engine compartment side without removing the headlamp body.

- **Grasp only the plastic base when handling the bulb. Never touch the glass envelope.**

1. Disconnect the battery cable.
2. Disconnect the harness connector from the back side of the bulb.
3. Turn the bulb retaining ring counterclockwise until it is free from the headlamp reflector, and then remove it.
4. Pull off the rubber cap.
5. Remove the headlamp bulb carefully. Do not shake or rotate the bulb when removing it.
6. Install in the reverse order of removal.

CAUTION:

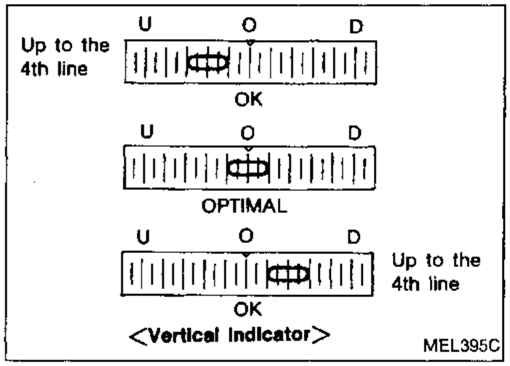
- **Do not leave headlamp reflector without bulb for a long period of time. Dust, moisture, smoke, etc. entering headlamp body may affect its performance. Remove headlamp bulb from the headlamp reflector just before a replacement bulb is installed.**



Aiming Adjustment

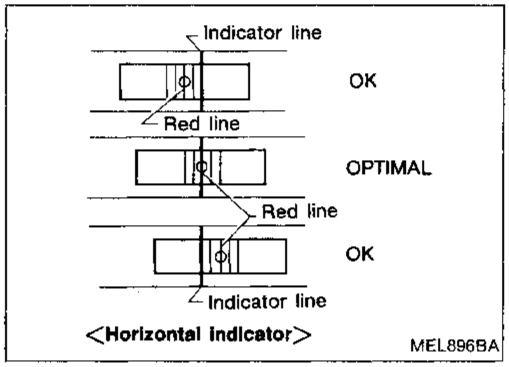
Before performing aiming adjustment, make sure of the following.

a. Keep all tires inflated to correct pressure.
b. Place vehicle on level ground.
c. See that vehicle is unloaded (except for full levels of coolant, engine oil and fuel, and spare tire, jack, and tools). Have the driver or equivalent weight placed in driver's seat.



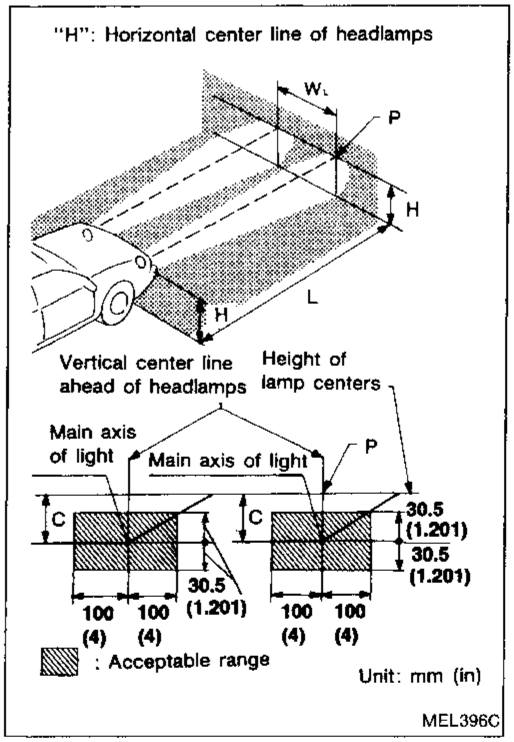
LOW BEAM

1. Open the hood.
2. Adjust the vertical indicator by turning the adjusting screw (vertical direction).
The bubble in the gauge should be centered on the "o" mark as shown in the illustration.



3. Adjust the horizontal indicator by turning the adjusting screw. (horizontal direction)
The inner red line with the "o" mark should align with the indicator line.

Aiming Adjustment (Cont'd)



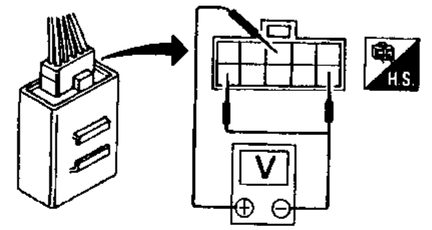
ADJUSTMENT AFTER HEADLAMP ASSEMBLY REPLACEMENT

If the vehicle has had front body repair and the headlamp assembly has been replaced, the aiming should be checked using the aiming chart as shown in the illustration.

a. **Adjust headlamps so that main axis of light is parallel to center line of body and is aligned with point P shown in the illustration.**

b. **Dotted lines in illustration show center of headlamp.**
"H": Horizontal center line of headlamps
"W$_L$": Distance between each headlamp center
"L": 7,620 mm (300.00 in)
"C": 75.5 mm (2.972 in)

Even if the horizontal indicator does not align with the indicator line or the bubble is not centered in the vertical indicator after aiming by the chart, it is acceptable if they are within the OK ranges.



All headlamps in good order ... Approx. 12V
RH side (or LH side) headlamp harness connectors are disconnected ... Less than 2.2V

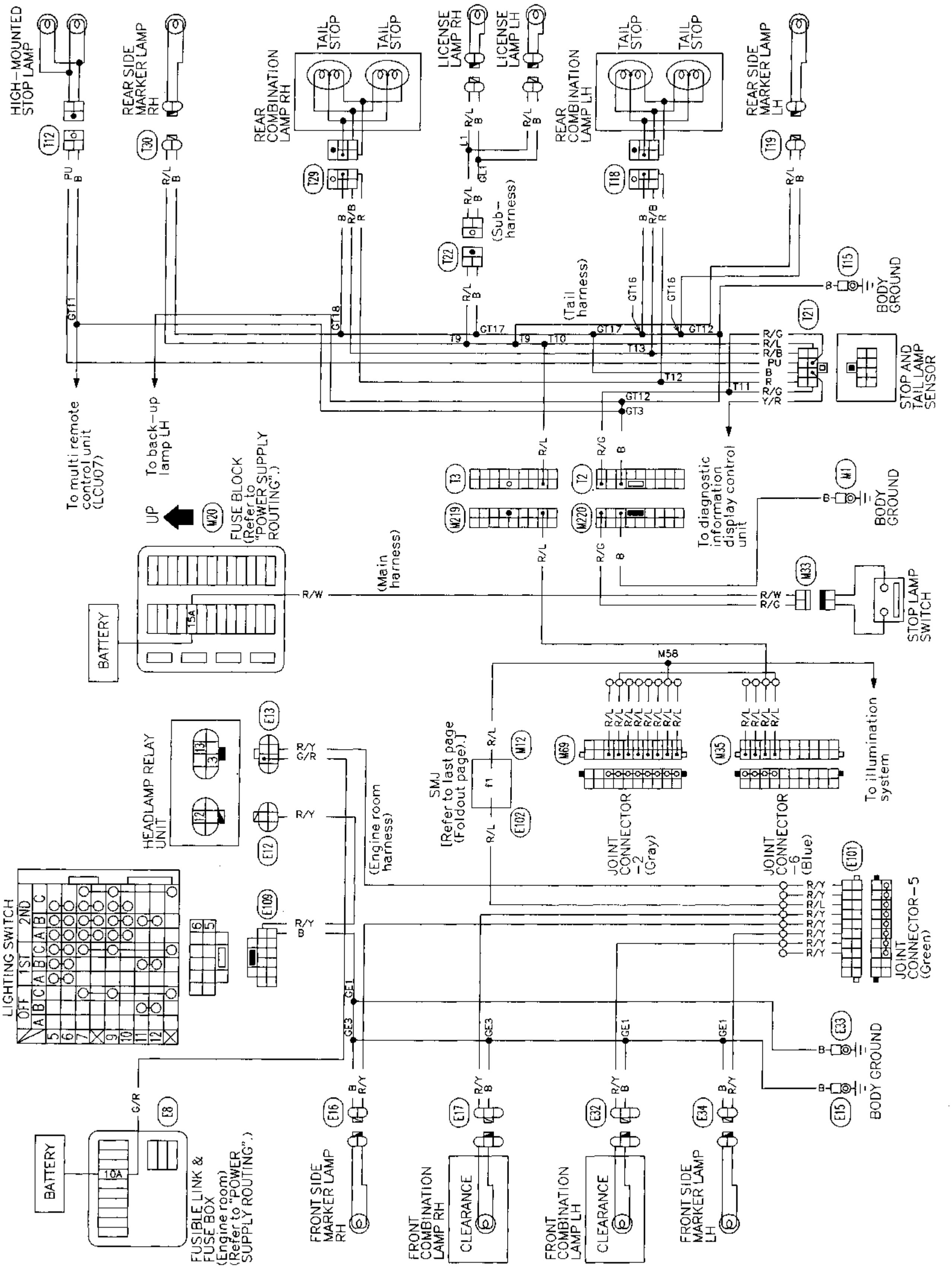
Headlamp Sensor Check

- Before checking, ensure that bulbs meet specifications.

1. Start engine.
2. Turn headlamp high beam on.

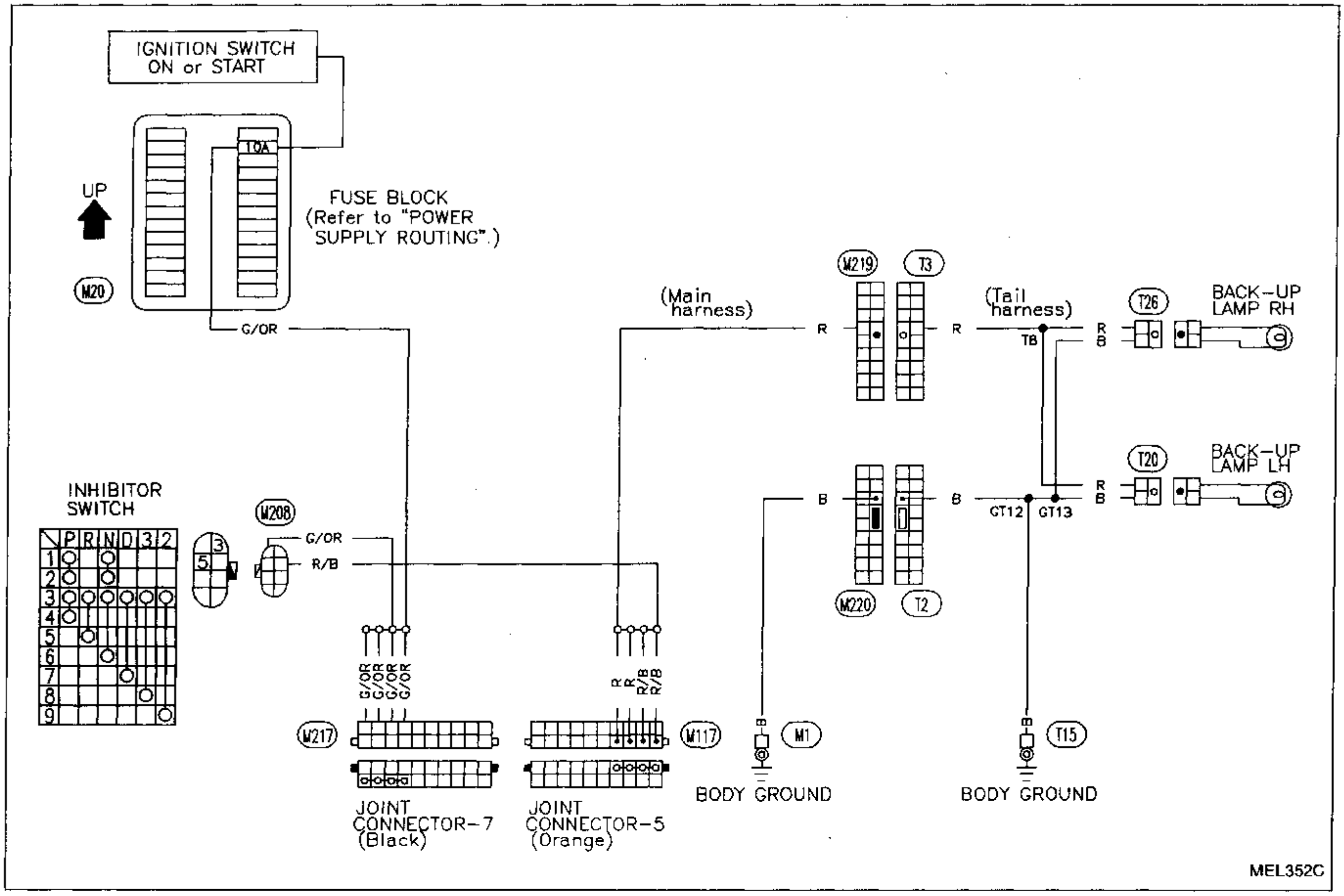
GI
MA
EM
LC
EF & EC
FE
AT
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

Clearance, License, Tail and Stop Lamps/Wiring Diagram

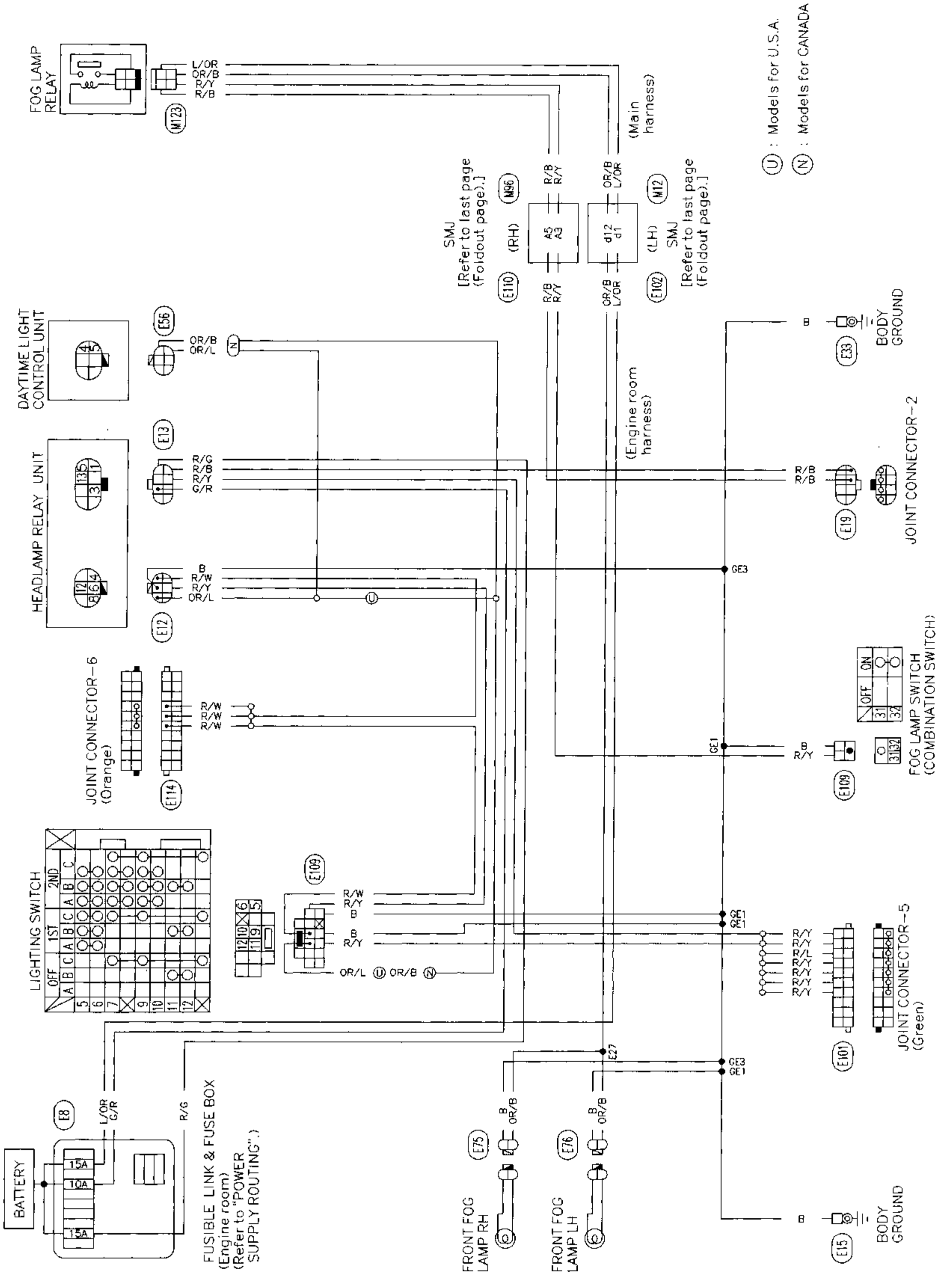


MEL729D

Back-up Lamp/Wiring Diagram

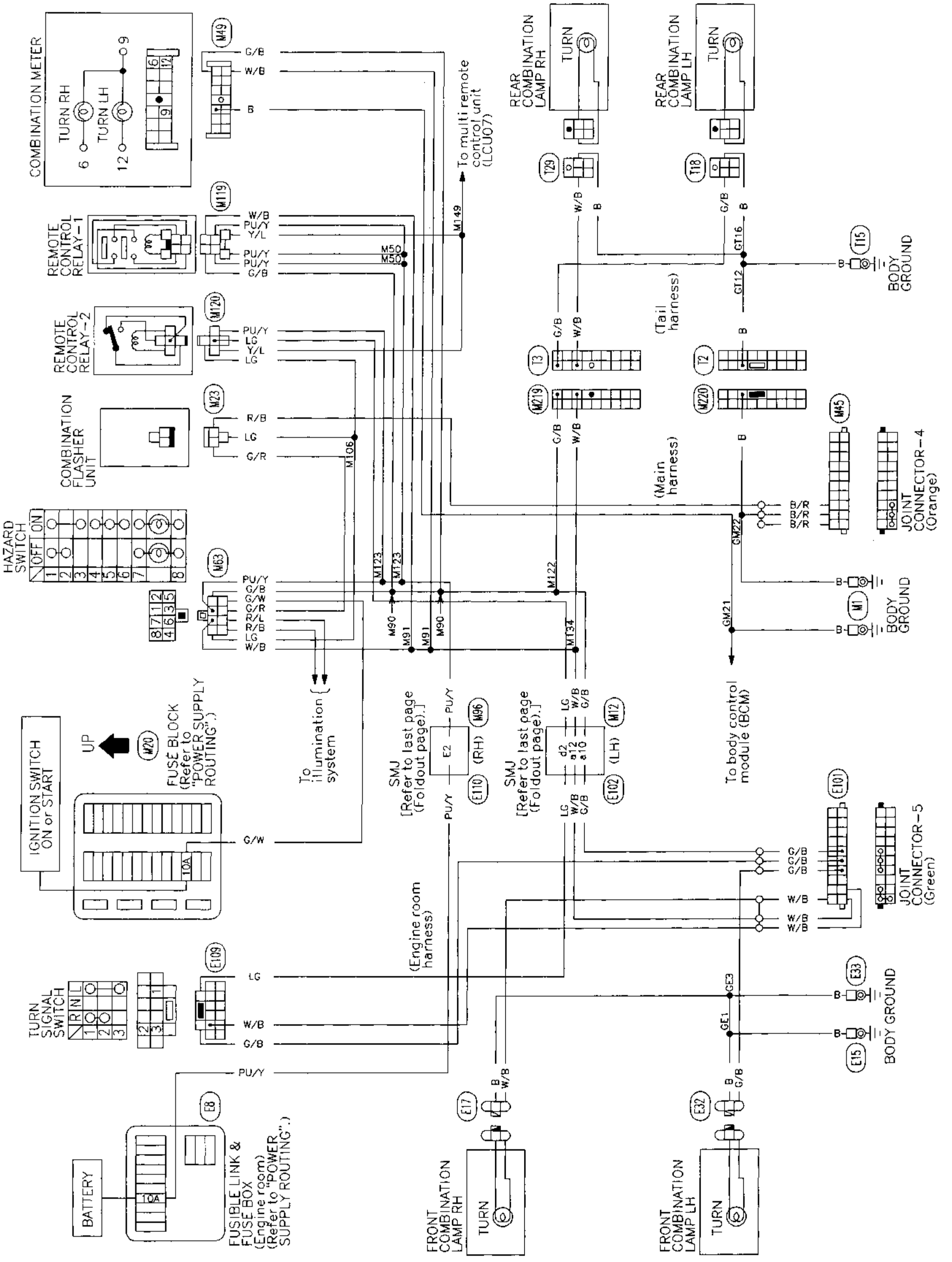


Front Fog Lamp/Wiring Diagram

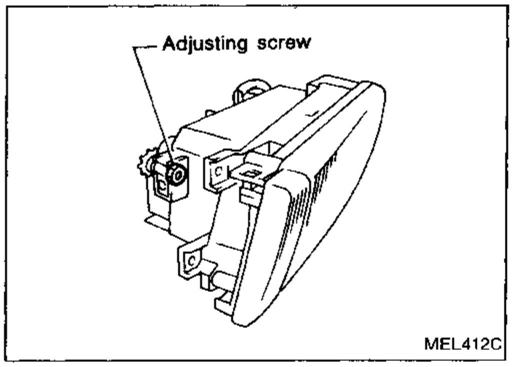


MEL730D

Turn Signal and Hazard Warning Lamps/Wiring Diagram



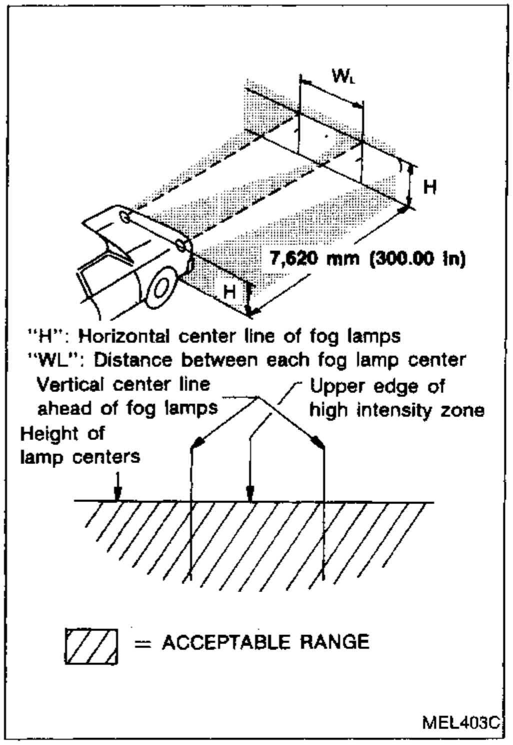
MEL731D



MEL412C

Fog Lamp Aiming Adjustment

- Adjust fog lamp so that upper edge of high intensity zone is within the acceptable range as shown at left.

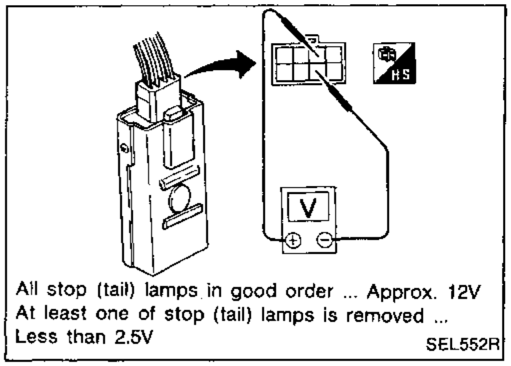


"H": Horizontal center line of fog lamps
"WL": Distance between each fog lamp center

MEL403C

- Dotted lines in illustration show center of fog lamp.

"H" Horizontal center line of fog lamp
"W_L" Distance between each fog lamp center



All stop (tail) lamps in good order ... Approx. 12V
At least one of stop (tail) lamps is removed ... Less than 2.5V

SEL552R

Stop and Tail Lamp Sensor Check

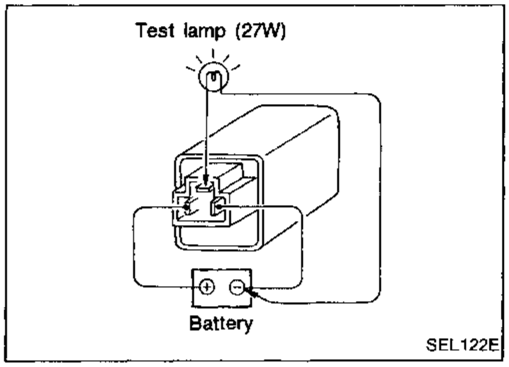
- Before checking, ensure that bulbs meet specifications.

STOP LAMP

1. Start engine.
2. Turn stop lamp switch on.

TAIL LAMP

1. Start engine.
2. Turn lighting switch on.



SEL122E

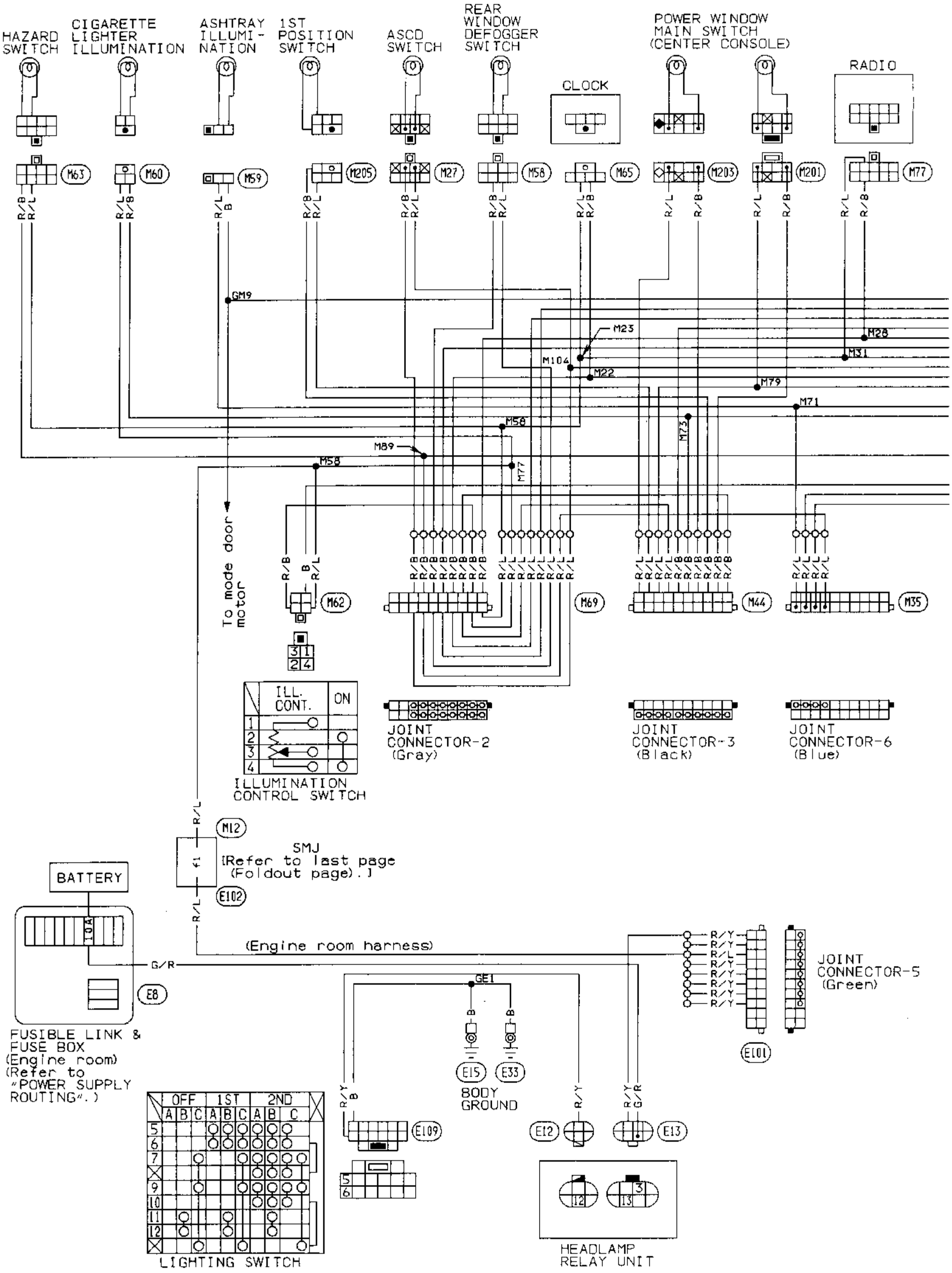
Combination Flasher Unit Check

- Before checking, ensure that bulbs meet specifications.
- Connect a battery and test lamp to the combination flasher unit, as shown. Combination flasher unit is properly functioning if it blinks when power is supplied to the circuit.

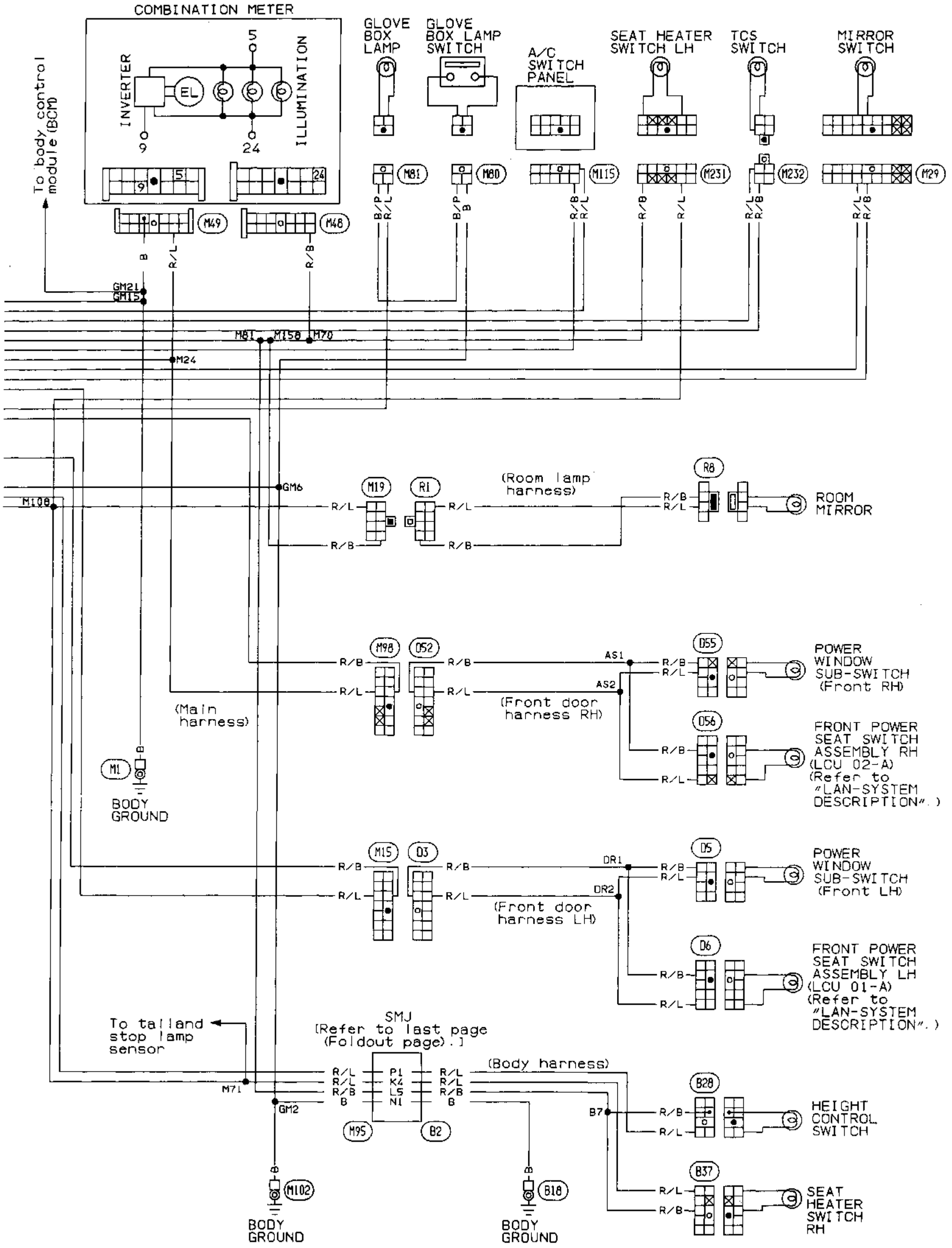
Bulb Specifications

	Wattage (12 volt)	Bulb No.
Headlamp		
High beam (Inside)	65	9005
Low beam (Outside)	55	9006
Front combination lamp		
Turn signal/Clearance	27/8	1157NA
Front side marker lamp	5	217
Front fog lamp	55	—
Rear combination lamp		
Turn signal	27	1156
Stop/Tail	27/8	1157
Back-up lamp	27	1156
Rear side marker lamp	3.8	194
License plate lamp	5	—
High-mounted stop lamp	18	921
Interior lamp	10	—
Spot lamp		
(Type A)	10	—
(Type B)	8	—
Step lamp	3.4	—
Trunk room lamp	3.4	—
Vanity mirror lamp	1.8	—
Foot lamp	3.4	—

Illumination/Wiring Diagram

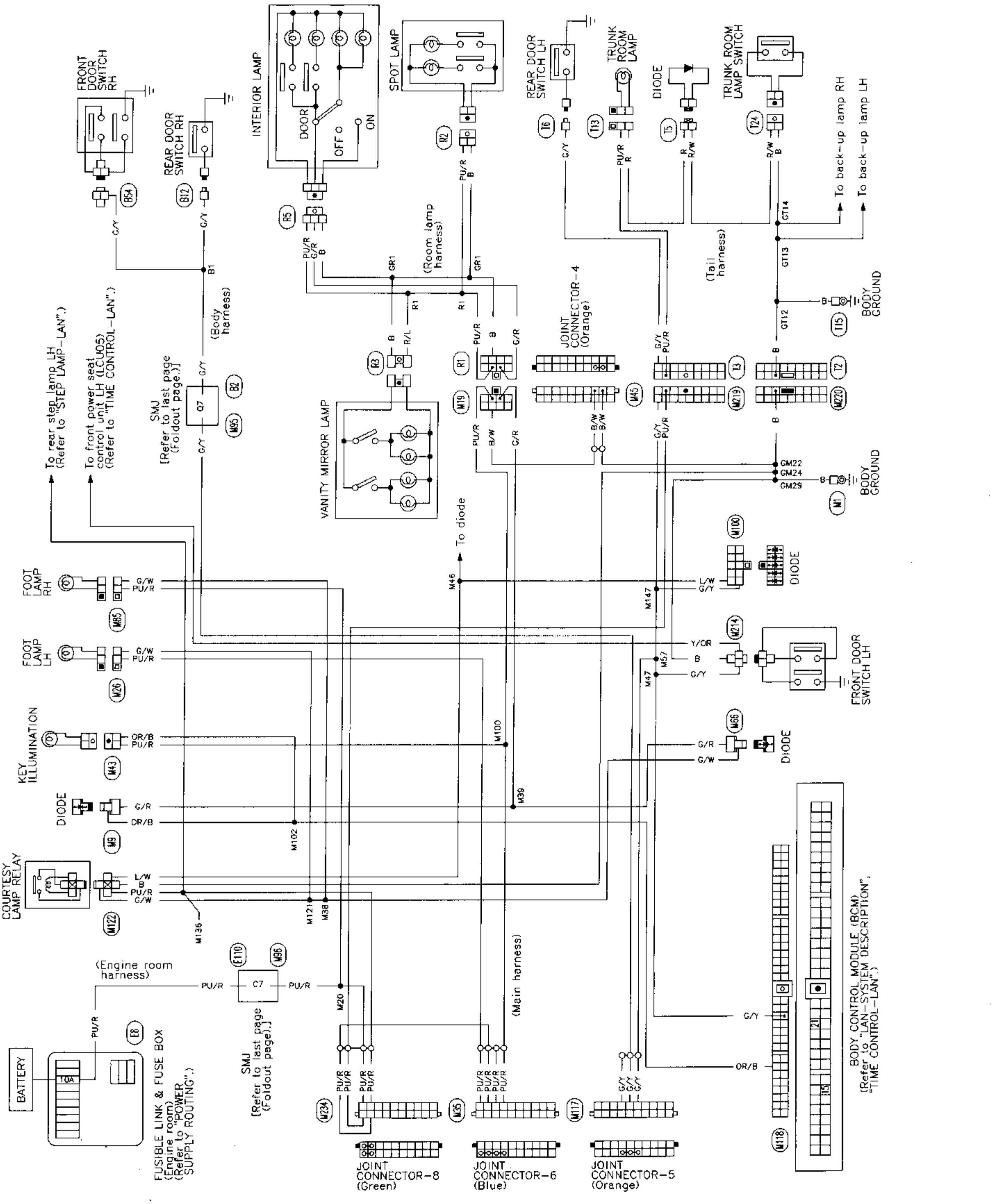


Illumination/Wiring Diagram (Cont'd)



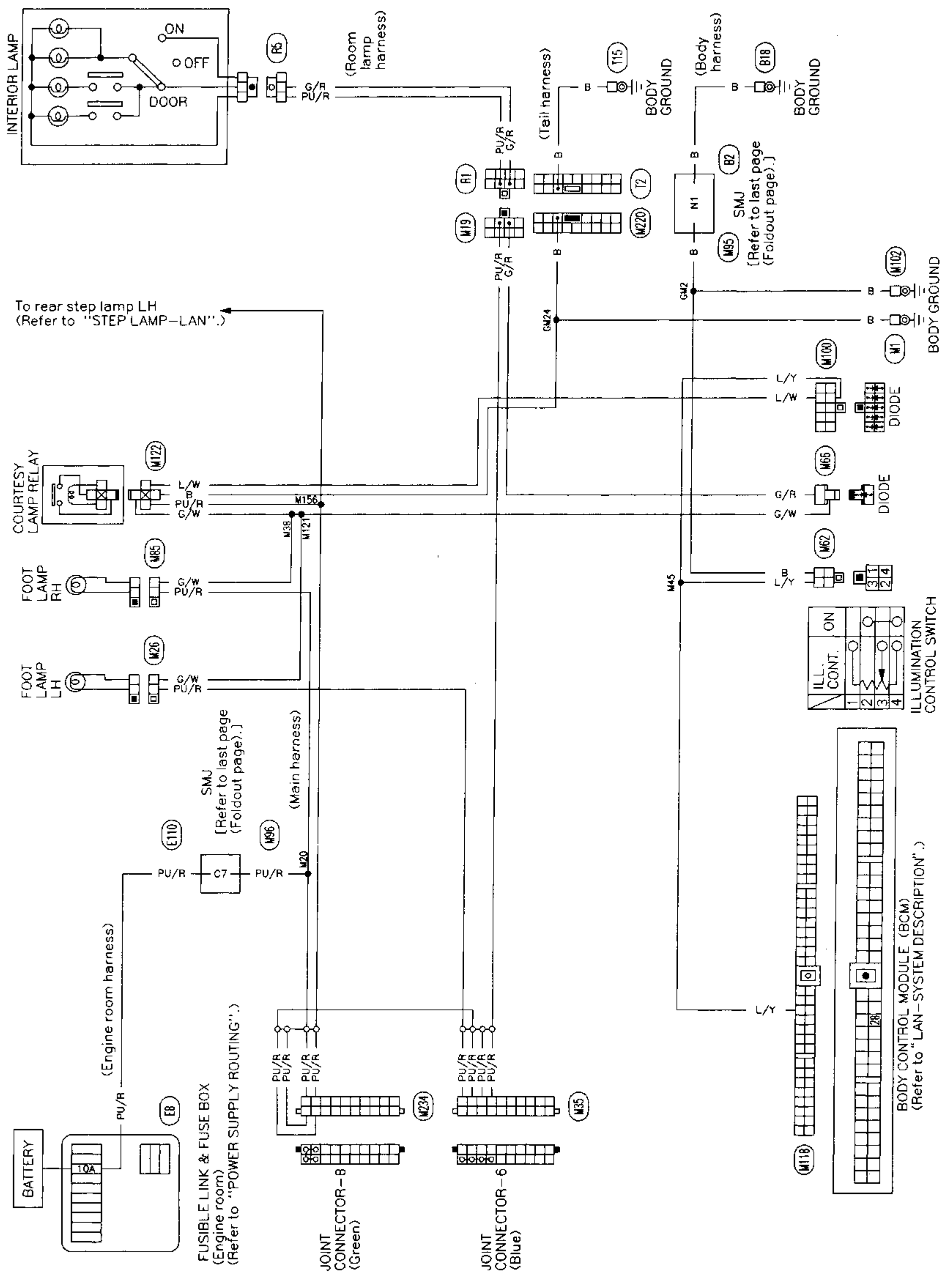
MEL355C

Interior, Spot, Foot and Trunk Room Lamps/ Wiring Diagram



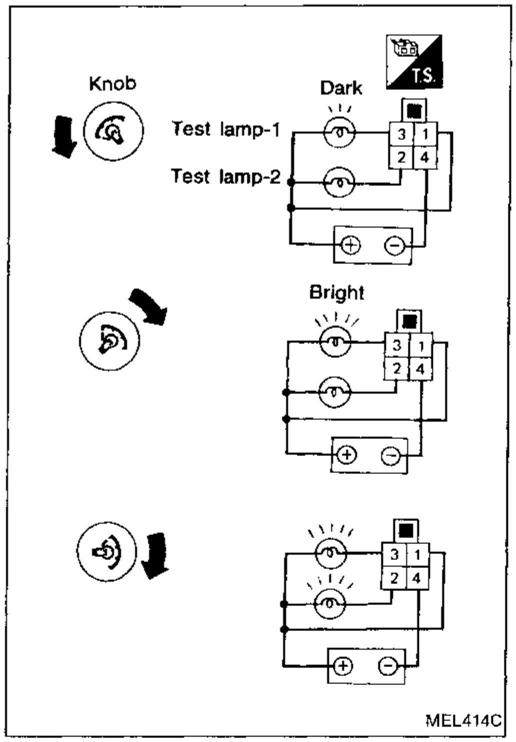
MEL734D

Courtesy Lamp/Wiring Diagram



ME357L

GI
MA
EM
LC
EF & EC
FE
AT
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

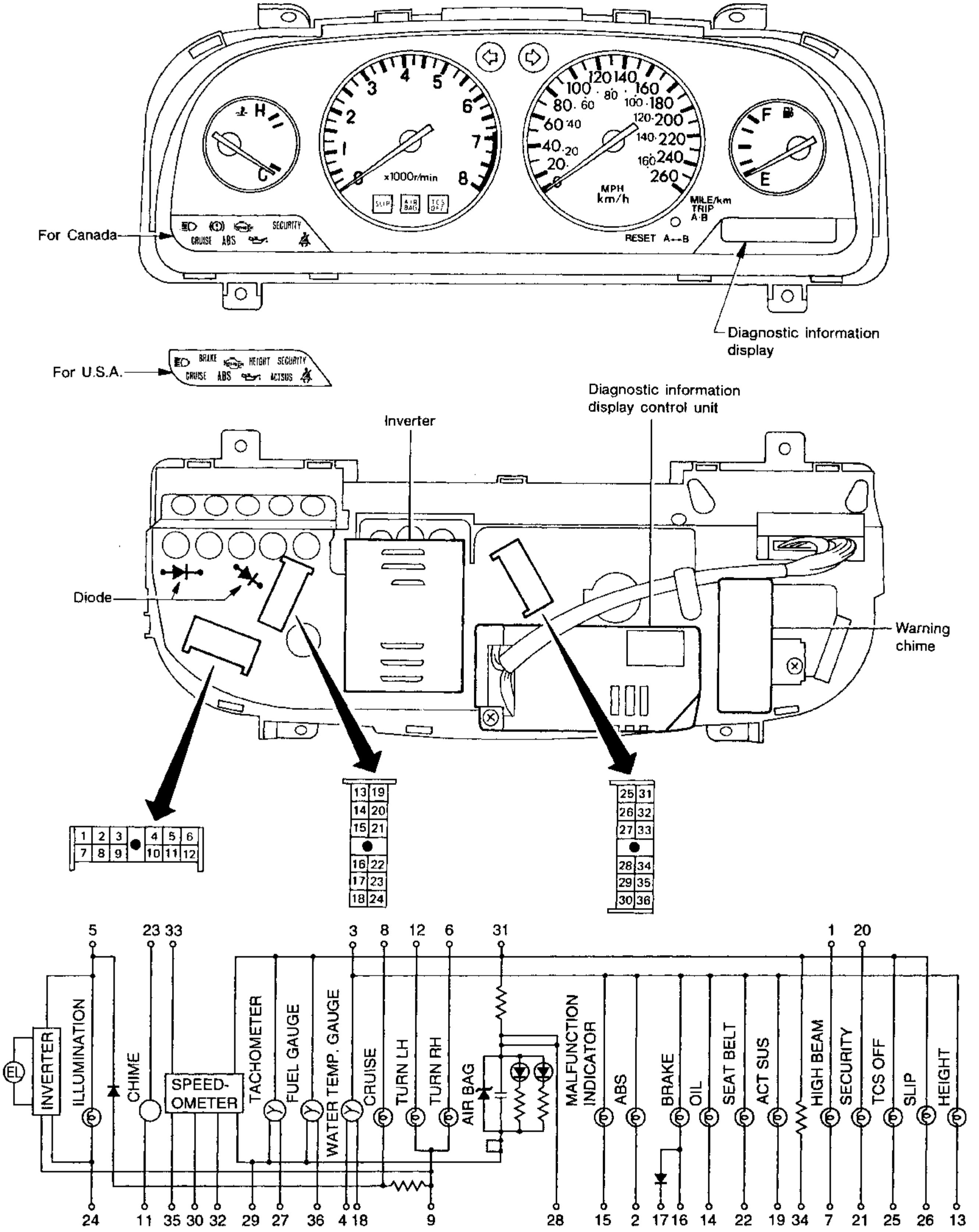


Illumination Control Switch Check

Connect as shown in figure at left.
Illumination control switch is in good order when test lamps activate as indicated below:

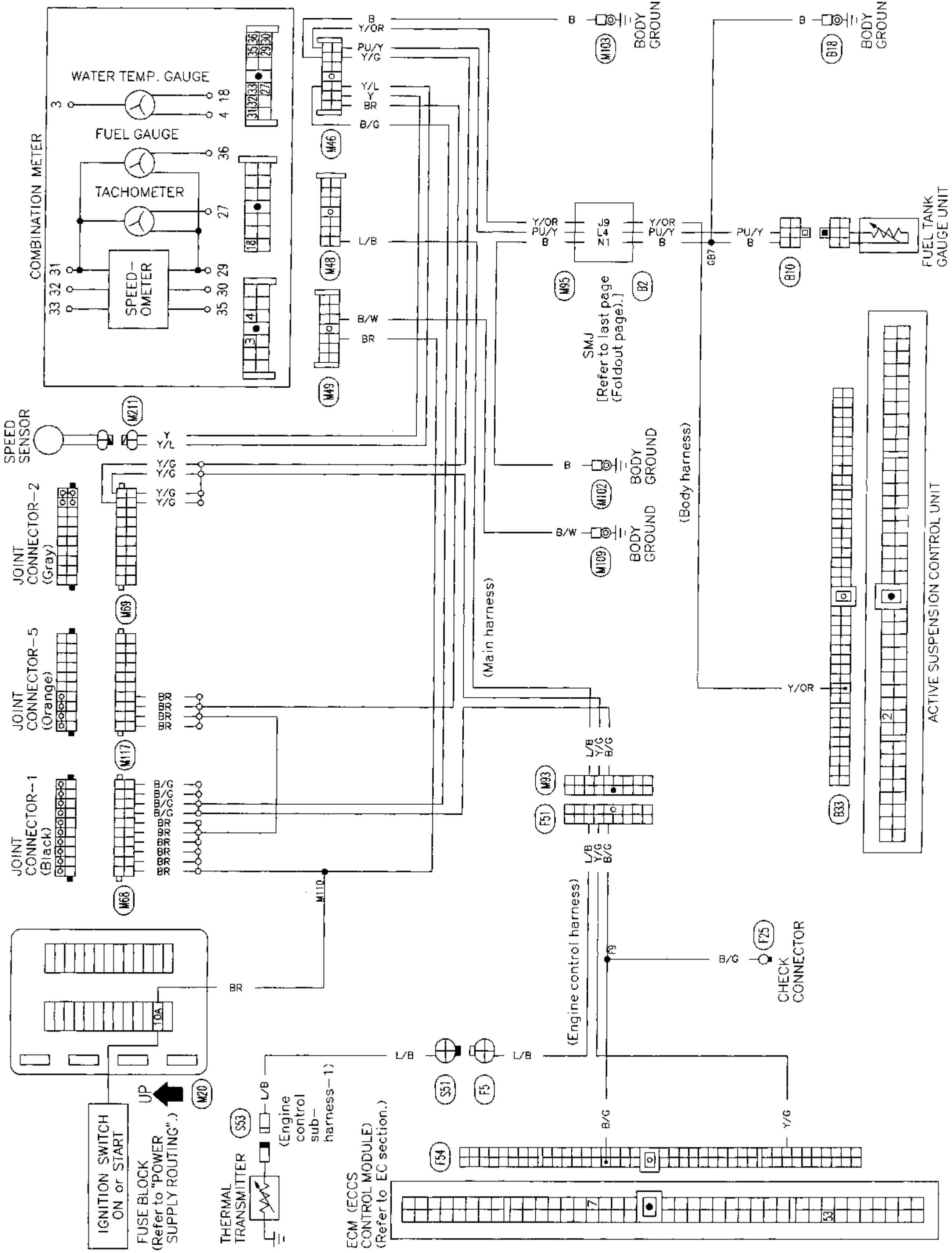
- When knob is turned counterclockwise or clockwise, test lamp-1 darkens or brightens accordingly. Turning knob clockwise further turns on switch and illuminates test lamp-2.

Combination Meter

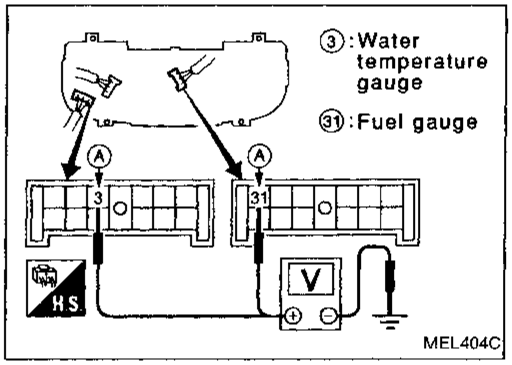


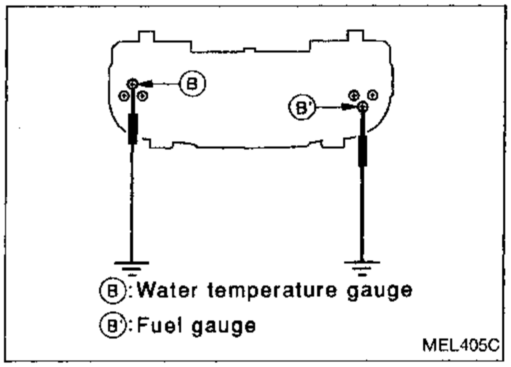
MEL830D

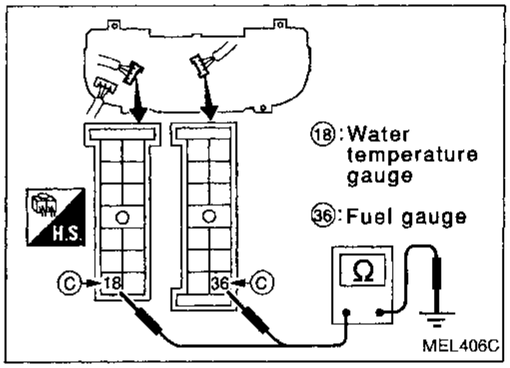
Speedometer, Tachometer, Temp. and Fuel Gauges/Wiring Diagram



MEL733D







Inspection/Fuel Gauge and Water Temperature Gauge

INSPECTION START

↓

CHECK POWER SOURCE.
1) Turn ignition switch "ON".
2) Check voltage between terminal Ⓐ and ground.
Battery voltage should exist.

NG → Check the following items.
1) Harness continuity between battery terminal and combination meter
2) Ignition relay
3) Fusible link and fuse
4) Ignition switch

OK ↓

CHECK GAUGE OPERATION.
1) Turn ignition switch "ON".
2) Connect terminals Ⓑ (Temp.), Ⓑ' (Fuel) and ground with wire for **less than 10 seconds**.
3) Check operation of gauge.
Gauge should move smoothly to full scale.

NG → Repair or replace gauge.

OK ↓

Check harness continuity between component and combination meter Ⓒ.

NG → Repair or replace.

OK ↓

CHECK COMPONENT.
Check gauge units and harness.
Refer to "Fuel Tank Gauge Unit Check", "Thermal Transmitter Check". (EL-41, 42)

NG → Repair or replace.
Refer to FE section. (Fuel tank gauge unit)

OK ↓

Reinstall any part removed.

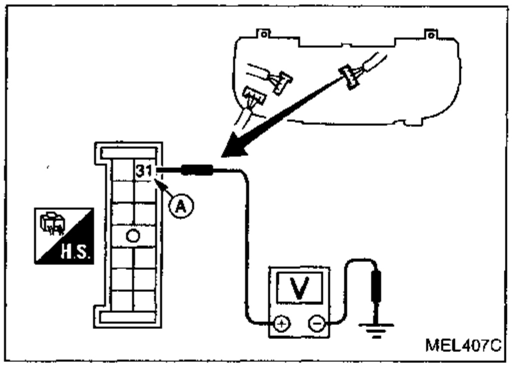
↓

INSPECTION END

Inspection/Vehicle Speed Sensor Signal Circuit

INSPECTION START

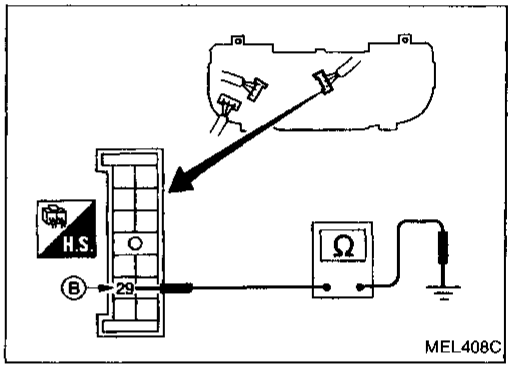
↓



CHECK POWER SOURCE.
1) Turn ignition switch "ON".
2) Check voltage between terminal Ⓐ and ground.
Battery voltage should exist.

NG → Check the following items.
1) Harness continuity between battery terminal and combination meter
2) Ignition relay
3) Fusible link and fuse
4) Ignition switch

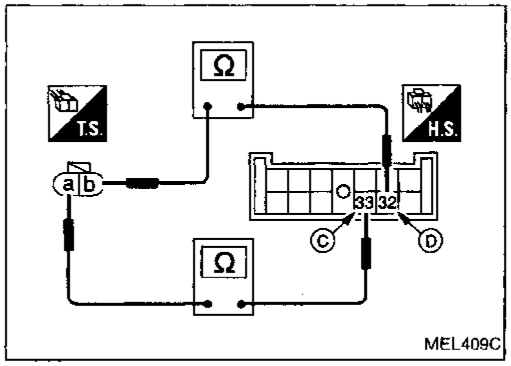
↓ OK



CHECK GROUND CIRCUIT.
Check harness continuity between terminal Ⓑ and body ground.
Continuity should exist.

NG → Repair harness or connectors.

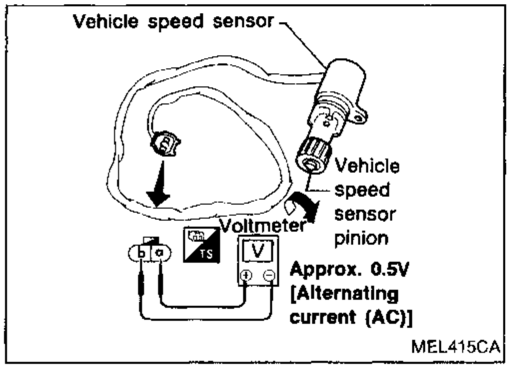
↓ OK



CHECK INPUT SIGNAL CIRCUIT.
Check harness continuity between terminal Ⓒ, Ⓓ and vehicle speed sensor terminal ⓐ, ⓑ.
Continuity should exist.

NG → Repair harness or connectors.

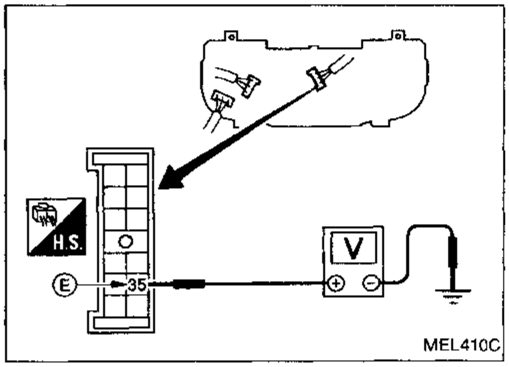
↓ OK



CHECK COMPONENT.
1) Remove vehicle speed sensor from transmission.
Location: Refer to "Location of Electrical Units".
2) Turn vehicle speed sensor pinion quickly and check voltage between terminal ⓐ and ⓑ.

NG → Replace vehicle speed sensor.

↓ OK



CHECK OUTPUT SIGNAL CIRCUIT.
1) Install vehicle speed sensor.
2) Jack up one rear wheel.
3) Turn ignition switch "ON".
4) Turn rear wheel by hand, make sure that needle of voltmeter swings between approx. 0V and approx. 5V.

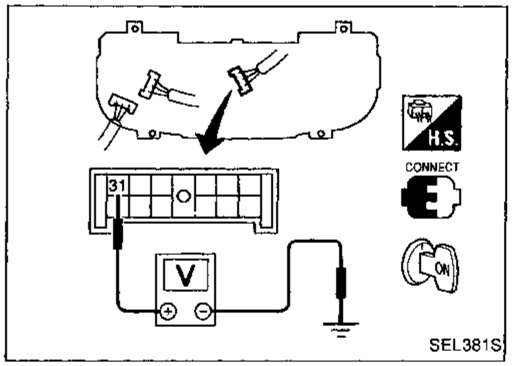
NG → Replace speedometer.

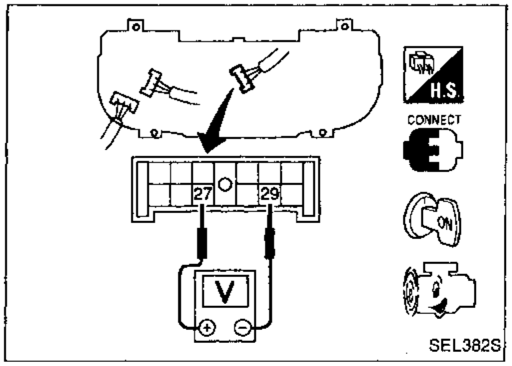
↓ OK

Reinstall any part removed.

↓

INSPECTION END





Inspection/Tachometer

INSPECTION START

↓

CHECK POWER SOURCE.
1) Turn ignition switch "ON".
2) Check voltage between terminal ㉛ and ground.
Battery positive voltage should exist.

NG → Check the following items.
1) Harness continuity between battery terminal and combination meter
2) Ignition relay
3) Fusible link and fuse
4) Ignition switch

↓ OK

CHECK ECM OUTPUT.
1) Start engine.
2) Check voltage between terminal ㉗ and ㉙ at idle and 2,000 rpm.
Lower RPM = Lower voltage
Higher RPM = Higher voltage
Voltage should change with RPM.

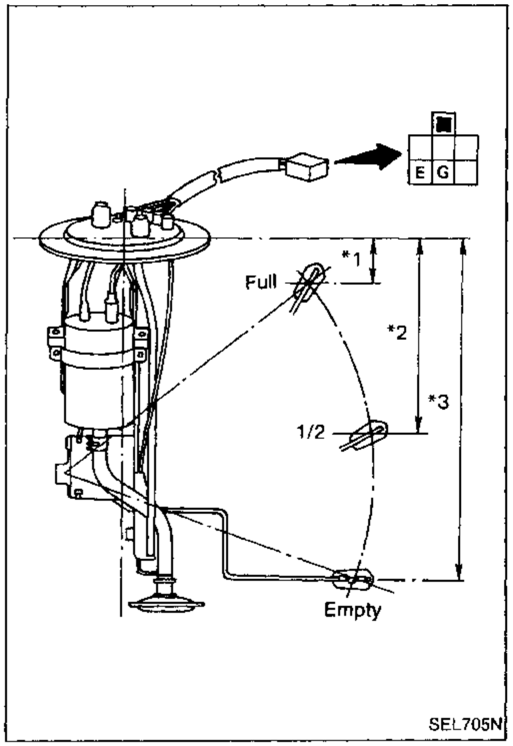
NG → Check harness and connector between ECM and combination meter, or check ground.

↓ OK

Replace tachometer.

↓

INSPECTION END

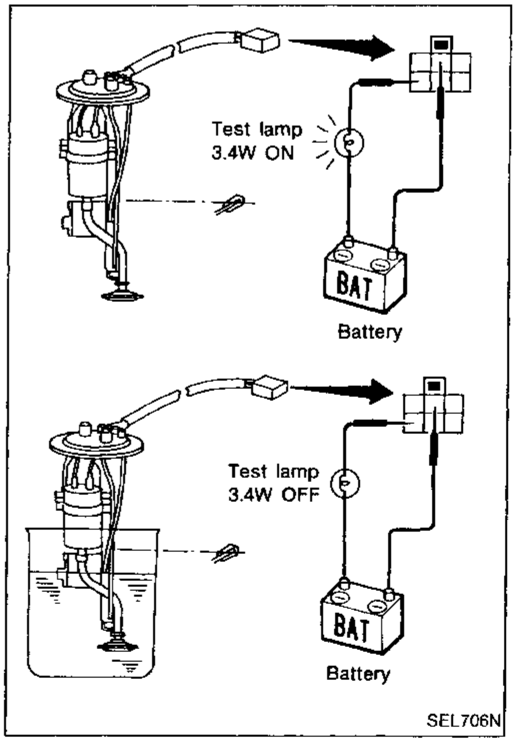


Fuel Tank Gauge Unit Check

- For removal, refer to FE section.

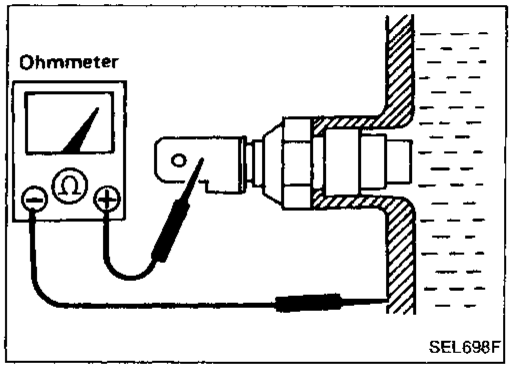
Check the resistance between terminals Ⓖ and Ⓔ.

Ohmmeter		Float position mm (in)			Resistance value (Ω)
(+)	(−)				
G	E	*3	Full	42.8 (1.685)	Approx. 4.3 - 5.8
		*2	1/2	185.0 (7.28)	Approx. 27.7 - 34.3
		*1	Empty	308.7 (12.15)	Approx. 79.3 - 84.8



Fuel Warning Lamp Sensor Check

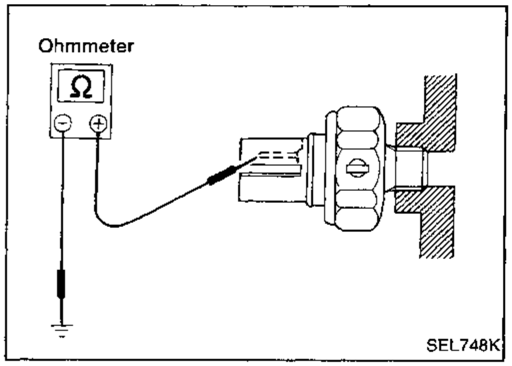
- It will take a short time for the bulb to light.



Thermal Transmitter Check

Check the resistance between the terminals of thermal transmitter and body ground.

Water temperature	Resistance
60°C (140°F)	Approx. 70 - 90Ω
100°C (212°F)	Approx. 21 - 24Ω

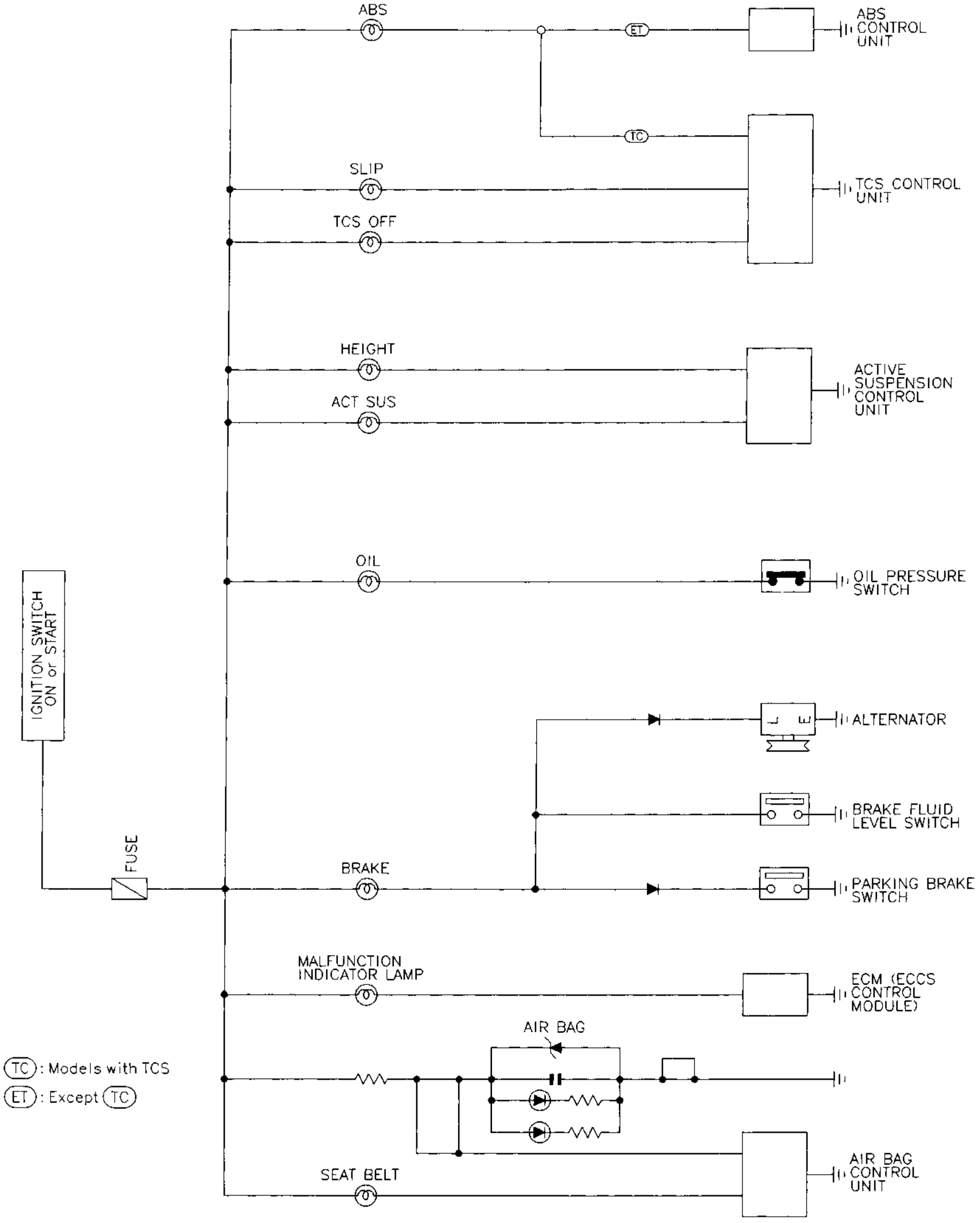


Oil Pressure Switch Check

Check the continuity between the terminals of oil pressure switch and body ground.

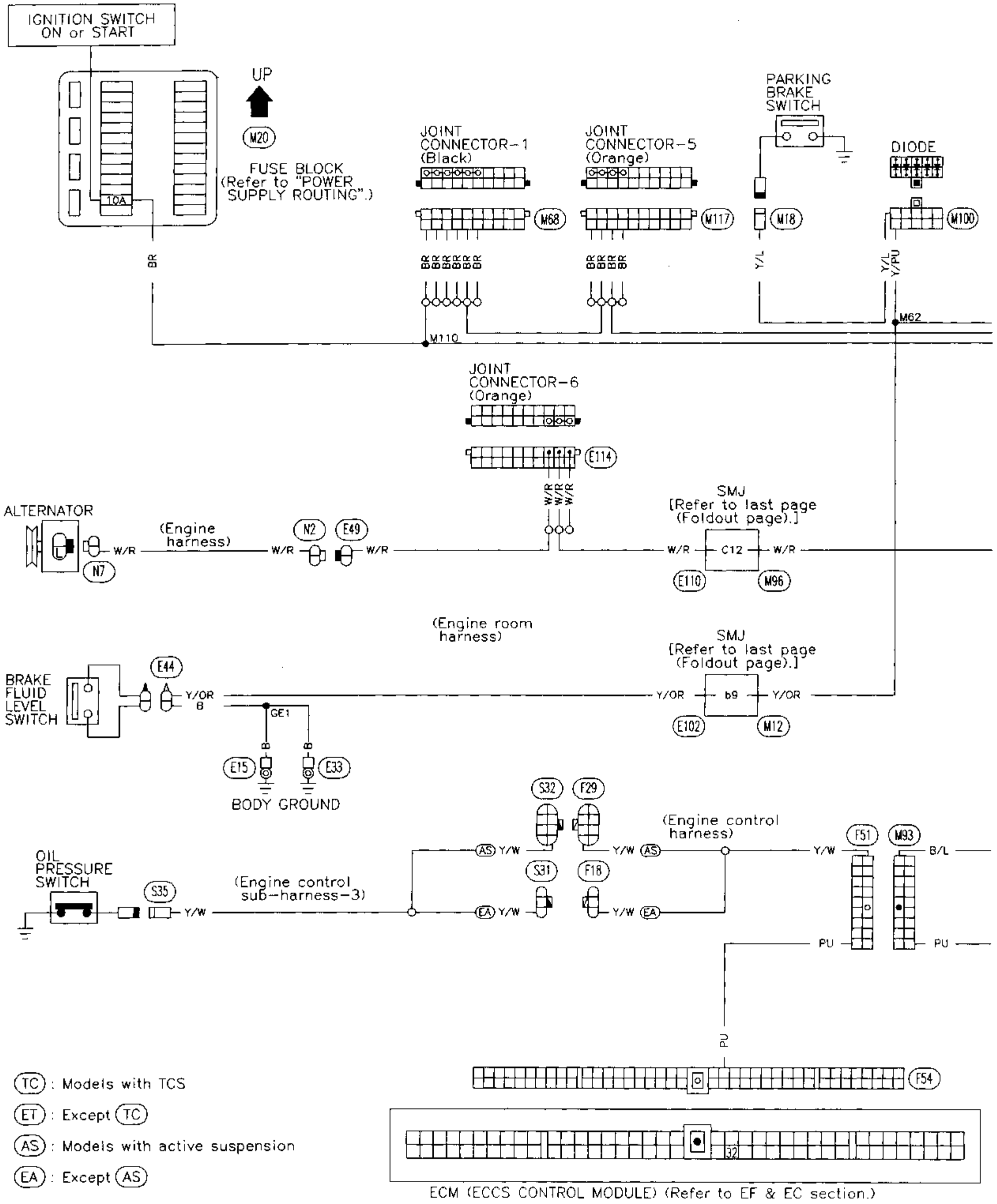
	Oil pressure kPa (kg/cm^2, psi)	Continuity
Engine start	More than 10 - 20 (0.1 - 0.2, 1.4 - 2.8)	NO
Engine stop	Less than 10 - 20 (0.1 - 0.2, 1.4 - 2.8)	YES

Warning Lamps/Schematic

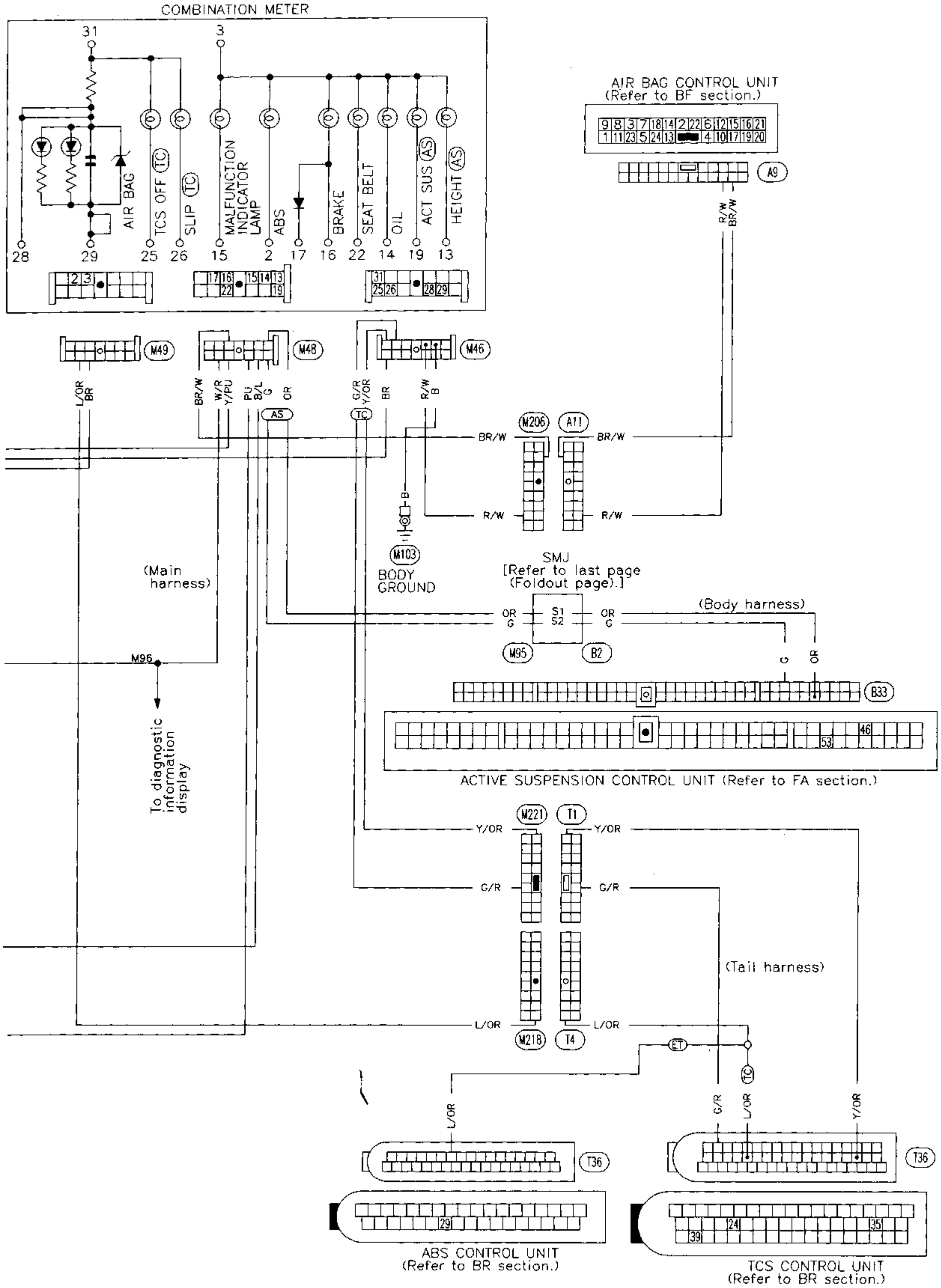


MEL821D

Warning Lamps/Wiring Diagram

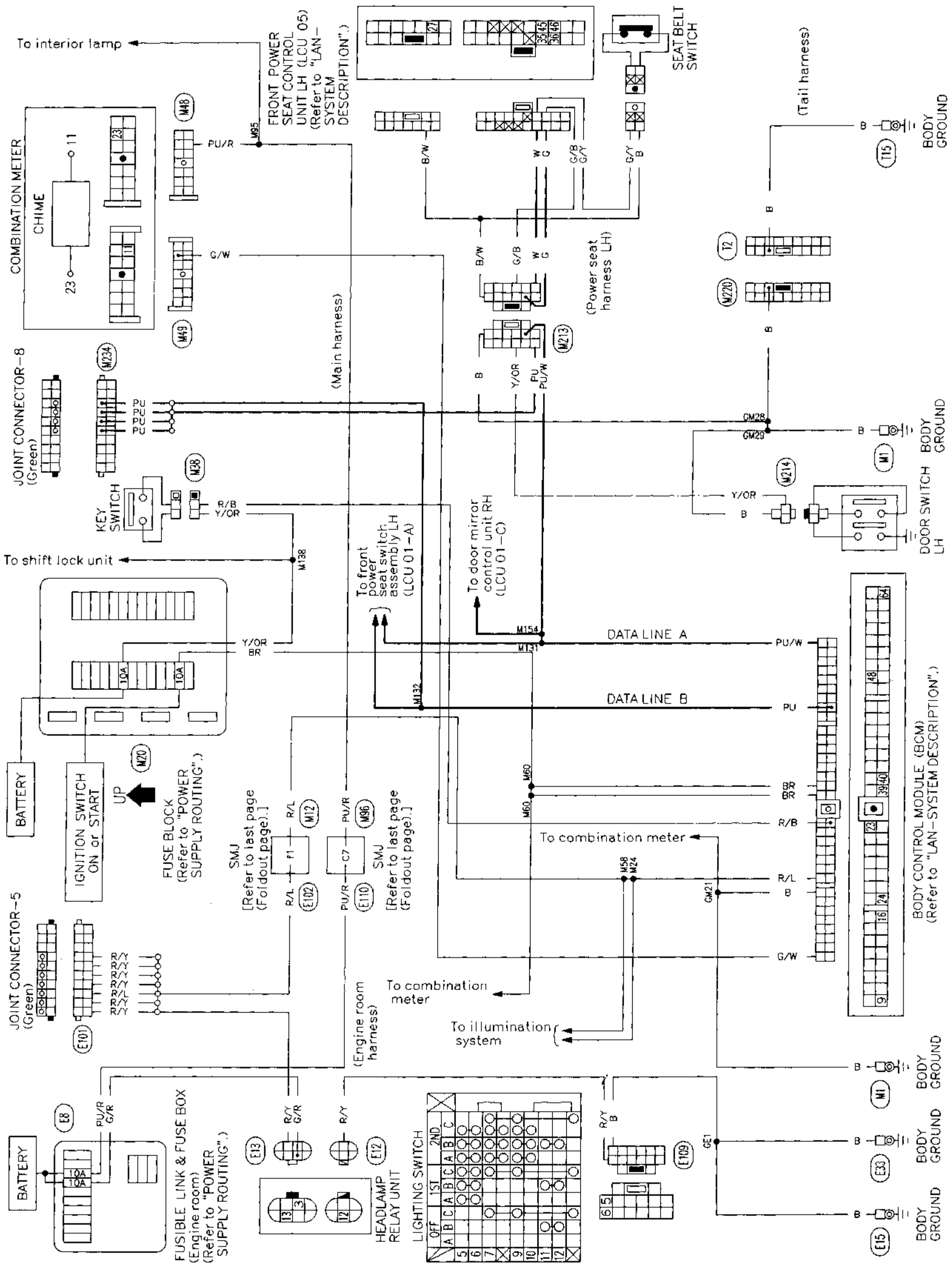


Warning Lamps/Wiring Diagram (Cont'd)



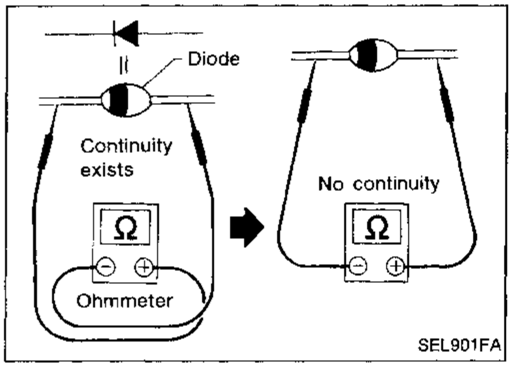
MEL822D

Warning Chime/Wiring Diagram



MEL823D

Diode Check



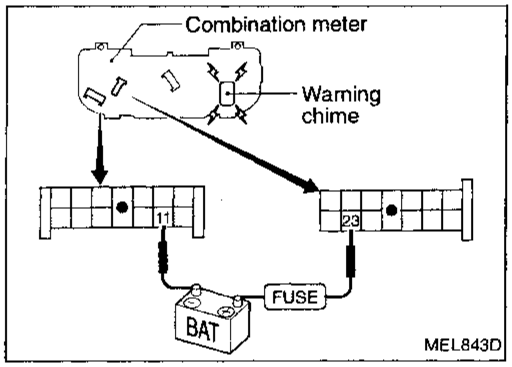
- Check continuity using an ohmmeter.
- Diode is functioning properly if test results are as shown in the figure at left.

NOTE: Specification may vary depending on the type of tester. Before performing this inspection, be sure to refer to the instruction manual for the tester to be used.

- Diodes for warning lamps are built into the combination meter printed circuit.

Refer to "Combination Meter". (EL-37)

Warning Chime Check



DIAGNOSTIC INFORMATION DISPLAY

Description

DISPLAY ITEM

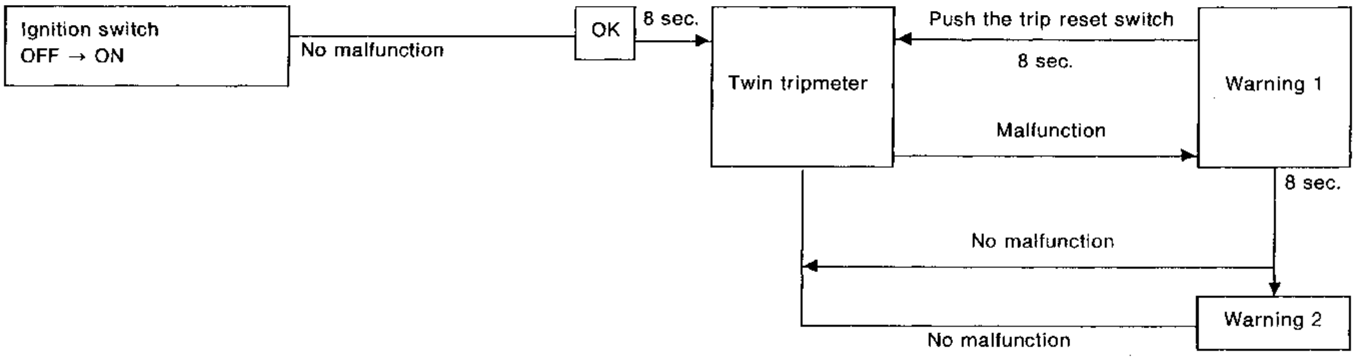
The display unit is made up of 13 × 2 LEDs and the display messages are as follows:

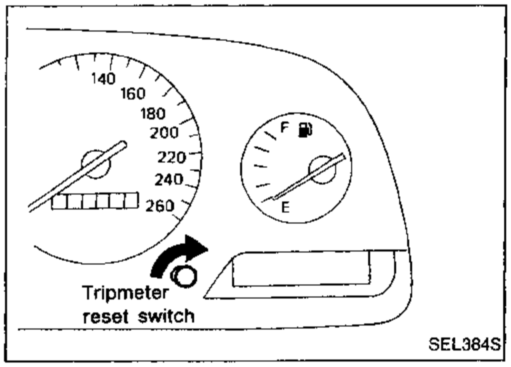
Priority	Item	Display	Priority	Item	Display
—	(Starting message with no warning)	OK	5	Headlamp	HEADLAMP INOPERATIVE
	Twin tripmeter (Mile)	A; XXX. X MILE B; XXX. X MILE	6	Stop lamp	STOP LAMP INOPERATIVE
	Twin tripmeter (km)	A; XXX. X km B; XXX. X km	7	Tail lamp	TAIL LAMP INOPERATIVE
1	A/T	TRANSMISSION MALFUNCTION	8	Stop & Tail lamp system	TAIL/STOP LAMP INOPERATIVE
2	Doors	DOOR OPEN			
3	Washer liquid	A; XXX. X MILE LOW WASHER	9	Charging system	LOW BATTERY CHARGE
4	Fuel amount	A; XXX. X MILE LOW FUEL	10	Brake pads	BRAKE PADS WORN

OPERATION

Turn ignition key to "ON". If there is no malfunction in the monitored items, the display indicates "OK" for eight seconds. After that the twin tripmeter appears. The twin tripmeter ceases to appear if any warning signal is detected. Diagnostic information is shown instead. If two or more warnings are given, the messages appear in turn at intervals of eight seconds.

While a warning is displayed, push the trip reset switch momentarily. The twin tripmeter indication can be obtained for eight seconds.

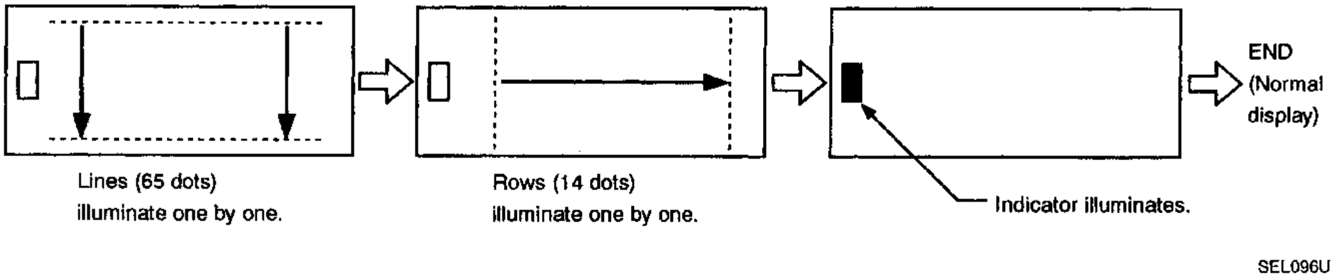




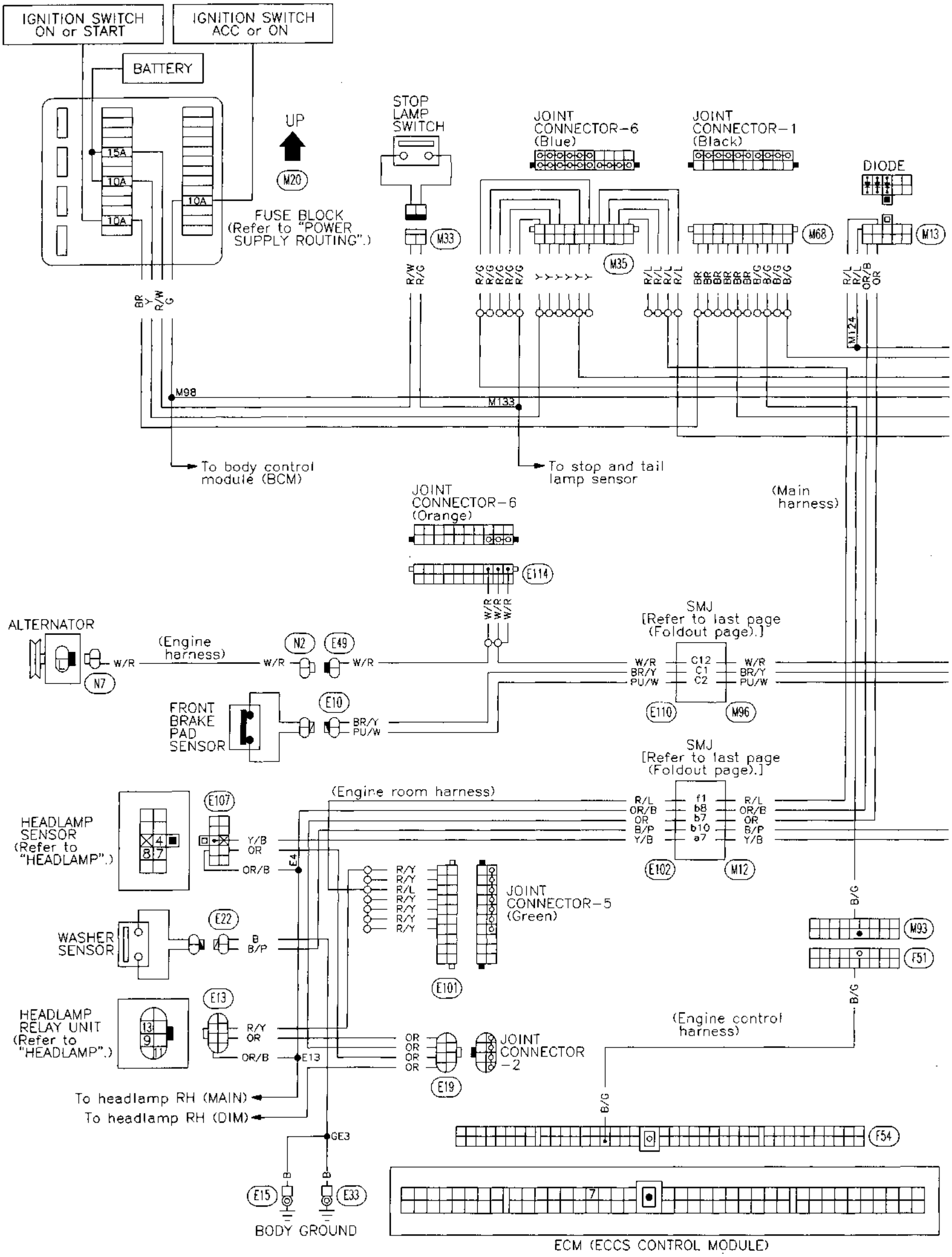
Self-check

SEGMENT CHECK

While turning the tripmeter reset switch to the right, turn the ignition switch from "OFF" to "ON". The display starts automatically.

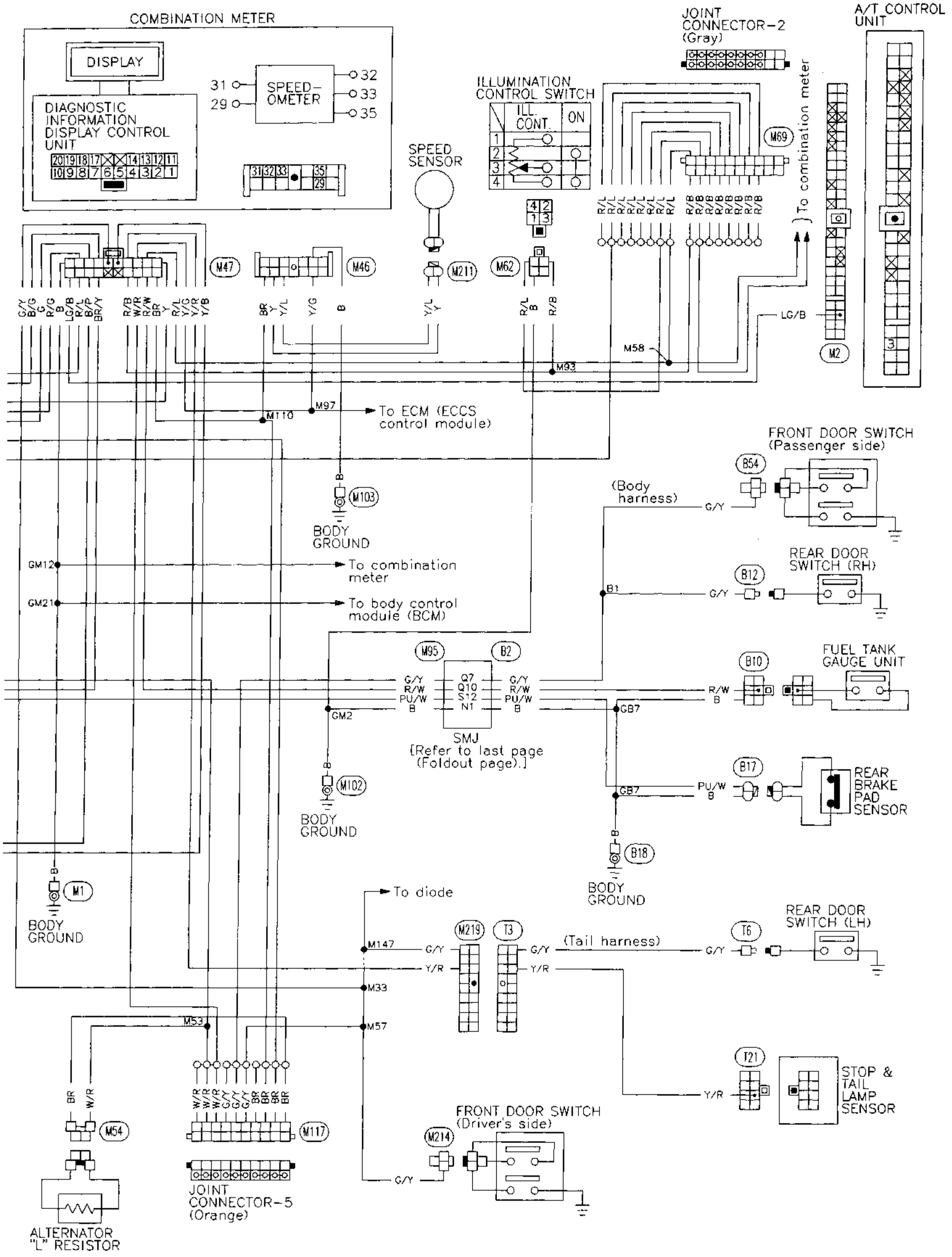


Wiring Diagram



DIAGNOSTIC INFORMATION DISPLAY

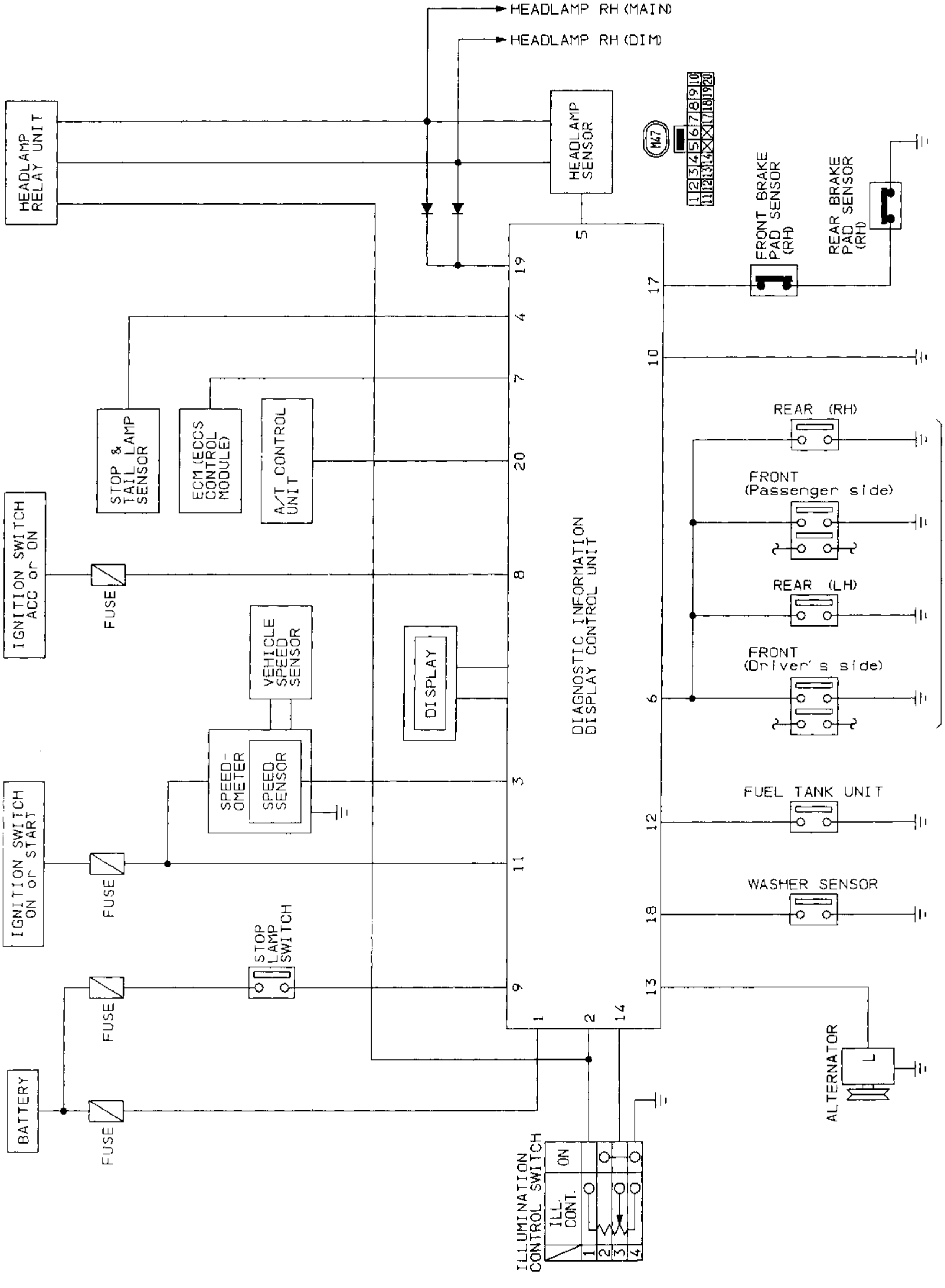
Wiring Diagram (Cont'd)



MEL824D

Trouble Diagnoses

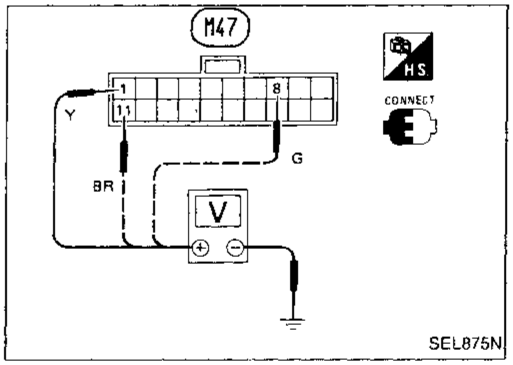
CIRCUIT DIAGRAM FOR QUICK PINPOINT CHECK



MEL321C

Trouble Diagnoses (Cont'd)

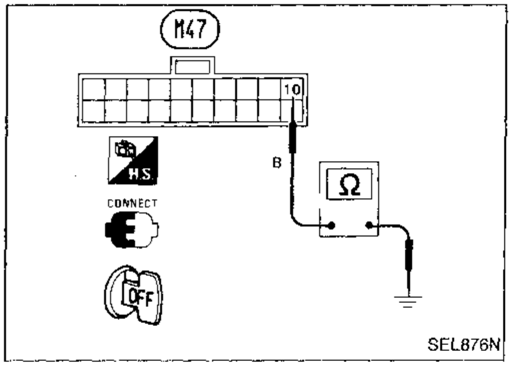
MAIN POWER SUPPLY AND GROUND CIRCUIT CHECK



SEL875N

Main power supply

Terminals		Ignition switch		
(+)	(−)	OFF	ACC	ON
①	Ground	Battery voltage	Battery voltage	Battery voltage
⑧	Ground	0V	Battery voltage	Battery voltage
⑪	Ground	0V	0V	Battery voltage

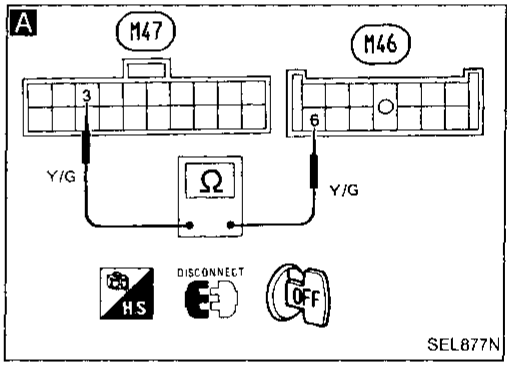


SEL876N

Ground circuit

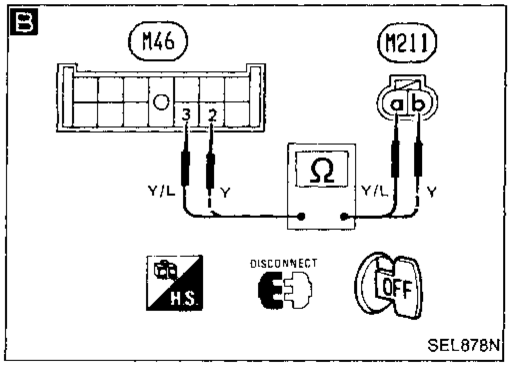
Terminal	Continuity
⑩ - Ground	Yes

A



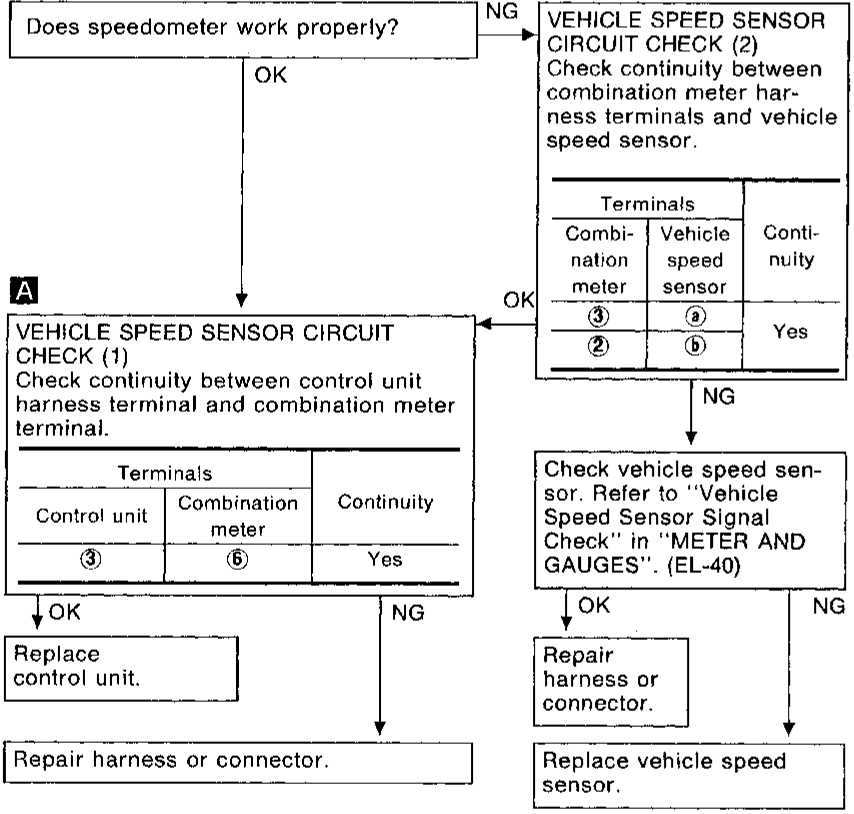
SEL877N

B



SEL878N

SYMPTOM:
Twin tripmeter does not work. (Remains at "0" or some number and does not accumulate.)



Does speedometer work properly?
NG → B
OK → A

B VEHICLE SPEED SENSOR CIRCUIT CHECK (2)
Check continuity between combination meter harness terminals and vehicle speed sensor.

Terminals		Continuity
Combination meter	Vehicle speed sensor	
③	ⓐ	Yes
②	ⓑ	

OK → A
NG → Check vehicle speed sensor. Refer to "Vehicle Speed Sensor Signal Check" in "METER AND GAUGES". (EL-40)

Check vehicle speed sensor. Refer to "Vehicle Speed Sensor Signal Check" in "METER AND GAUGES". (EL-40)
OK → Repair harness or connector.
NG → Replace vehicle speed sensor.

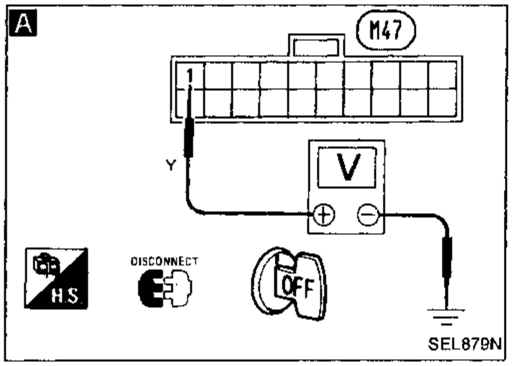
A VEHICLE SPEED SENSOR CIRCUIT CHECK (1)
Check continuity between control unit harness terminal and combination meter terminal.

Terminals		Continuity
Control unit	Combination meter	
③	⑥	Yes

OK → Replace control unit.
NG → Repair harness or connector.

GI
MA
EM
LC
EF &
EC
FE
AT
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

Trouble Diagnoses (Cont'd)



SYMPTOM:
Twin tripmeter is reset when ignition switch is turned off.

Does clock work properly? — NG → Check fuse.

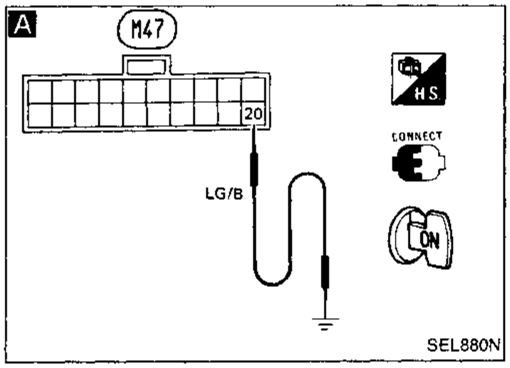
↓ OK

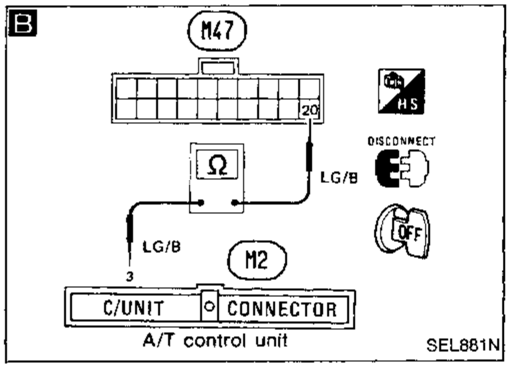
A

BACK-UP POWER SUPPLY CIRCUIT CHECK
Check voltage between control unit harness terminal ① and body ground.
Battery voltage should exist. — NG → Repair harness between control unit and fuse.

↓ OK

Replace control unit.





Warning Display: TRANSMISSION MALFUNCTION

A

A/T INPUT SIGNAL CHECK
Connect control unit harness terminal ⑳ and body ground to see if warning display appears. — NG → Replace control unit.

↓ OK

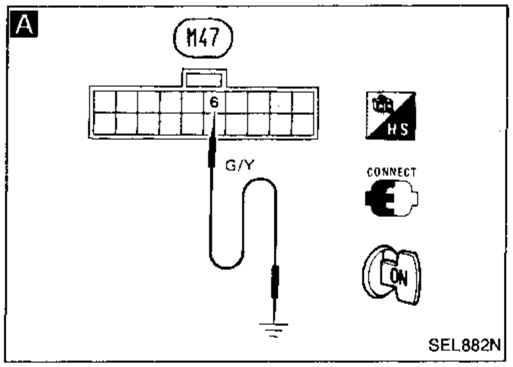
B

A/T CONTROL CIRCUIT CHECK
Check continuity between harness terminals ⑳ and ③. — NG → Repair harness and connector.

↓ OK

Check A/T control unit.
Refer to AT section.

Trouble Diagnoses (Cont'd)



Warning Display: DOOR OPEN

DOOR SWITCH CHECK
Check if interior lamp comes on when at least one of the doors is opened.

NG → Replace door switch.

OK ↓

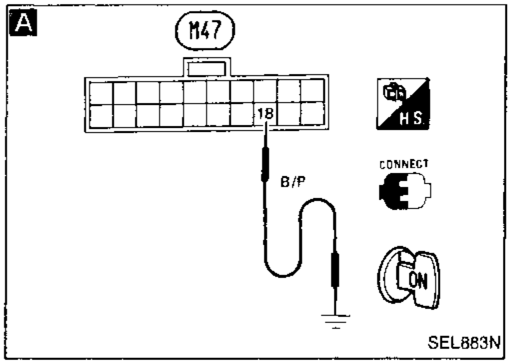
A

DOOR SWITCH INPUT SIGNAL CHECK
Connect control unit harness terminal ⑥ and body ground to see if warning display appears.

NG → Replace control unit.

OK ↓

Repair harness and connector between control unit and door switch.



Warning Display: LOW WASHER

A

WASHER SENSOR INPUT SIGNAL CHECK
Connect control unit harness terminal ⑱ and body ground to see if warning display appears.

NG → Replace control unit.

OK ↓

WASHER SENSOR CHECK
Check washer sensor.

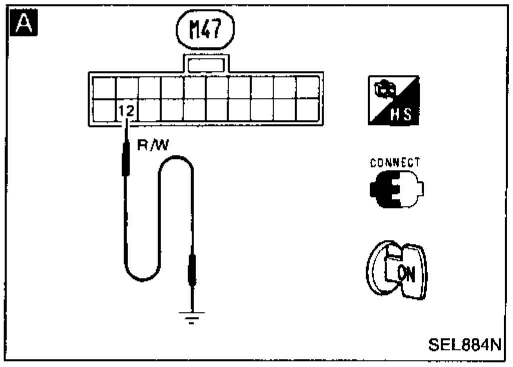
NG → Replace washer sensor.

OK ↓

Repair harness and connector.

GI
MA
EM
LC
EF & EC
FE
AT
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

Trouble Diagnoses (Cont'd)



Warning Display: LOW FUEL

A

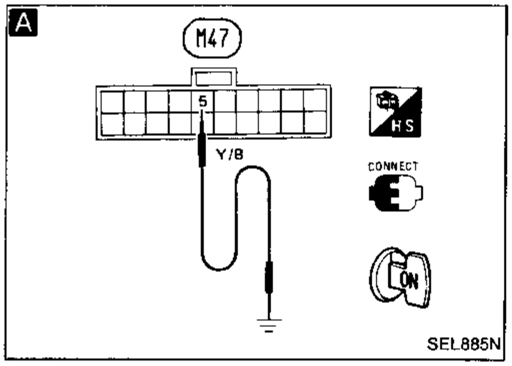
FUEL SENSOR INPUT SIGNAL CHECK
Connect control unit harness terminal ⑫ and body ground to see if warning display appears.

- NG → Replace control unit.
- OK ↓

Check fuel gauge unit.
Refer to "METER AND GAUGES". (EL-41)

- NG → Replace fuel gauge unit.
- OK ↓

Repair harness and connector.



Warning Display: HEADLAMP INOPERATIVE

A

HEADLAMP INPUT SIGNAL CHECK
Connect control unit harness terminal ⑤ and body ground to see if warning display appears.

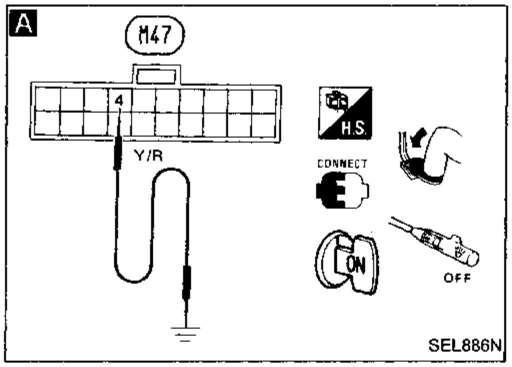
- NG → Replace control unit.
- OK ↓

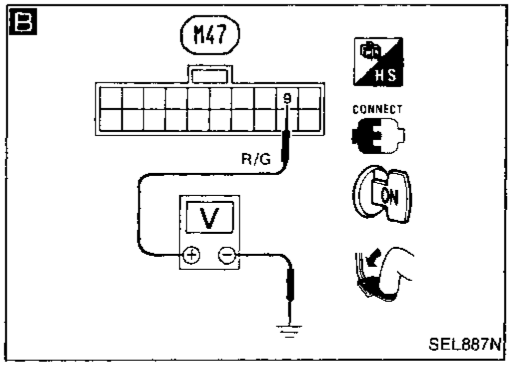
Check headlamp sensor.
Refer to "HEADLAMP". (EL-25)

- NG → Replace headlamp sensor.
- OK ↓

Repair harness and connector.

Trouble Diagnoses (Cont'd)





Warning Display: STOP LAMP INOPERATIVE

A

STOP LAMP INPUT SIGNAL CHECK
1) Light switch position is OFF.
2) Depress brake pedal.
3) Connect control unit harness terminal ④ and body ground to see if warning display appears.

NG → Replace control unit.

OK ↓

Check stop & tail lamp sensor.
Refer to "EXTERIOR LAMP". (EL-30)

NG → Replace stop & tail lamp sensor.

OK ↓

B

STOP LAMP CIRCUIT CHECK
Check if voltage across terminal ⑨ and body ground is battery voltage when brake pedal is depressed.

NG → Replace or repair stop lamp switch and harness.

OK ↓

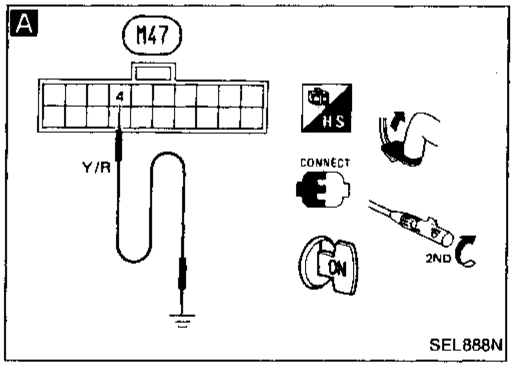
Check headlamp relay or illumination control switch.

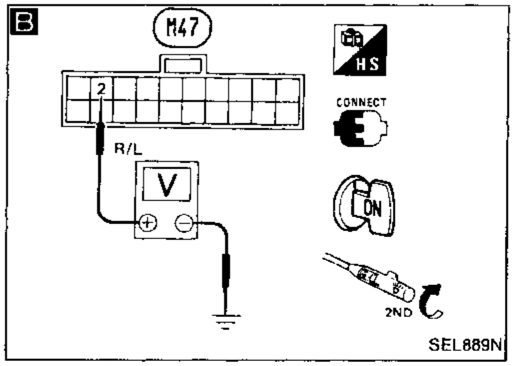
NG → Replace headlamp relay or illumination control switch.

OK ↓

Repair harness or connector.

Trouble Diagnoses (Cont'd)





Warning Display: TAIL LAMP INOPERATIVE

A

TAIL LAMP INPUT SIGNAL CHECK
1) Turn lighting switch from OFF to 2ND.
2) Release brake pedal.
3) Connect control unit harness terminal ④ and body ground to see if warning display appears.

NG → Replace control unit.

OK ↓

Check stop & tail lamp sensor.
Refer to "EXTERIOR LAMP". (EL-30)

NG → Replace stop & tail lamp sensor.

OK ↓

B

LIGHTING SWITCH CIRCUIT CHECK
Check if voltage across terminal ② and body ground is battery voltage when lighting switch is turned from OFF to 2ND.

NG → Check headlamp relay or illumination control switch.

OK ↓

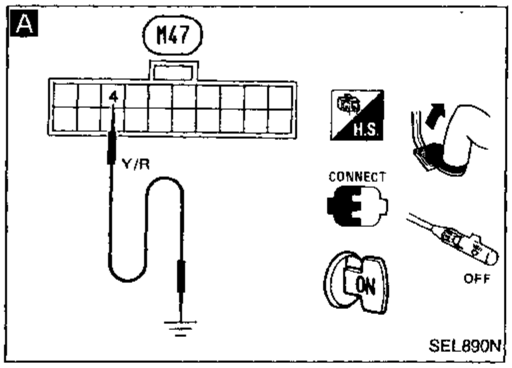
Check stop lamp switch.

NG → Replace stop lamp switch.

OK ↓

Repair harness or connector.

Trouble Diagnoses (Cont'd)



Warning Display: TAIL/STOP LAMP INOPERATIVE

A

TAIL & STOP LAMP INPUT SIGNAL CHECK
1) Lighting switch position is OFF.
2) Release brake pedal.
3) Connect control unit harness terminal ④ and body ground to see if warning display appears.

NG → Replace control unit.

OK ↓

Check stop & tail lamp sensor.
Refer to "EXTERIOR LAMP". (EL-30)

NG → Replace stop & tail lamp sensor.

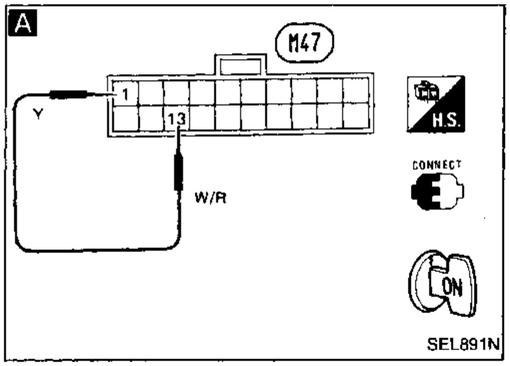
OK ↓

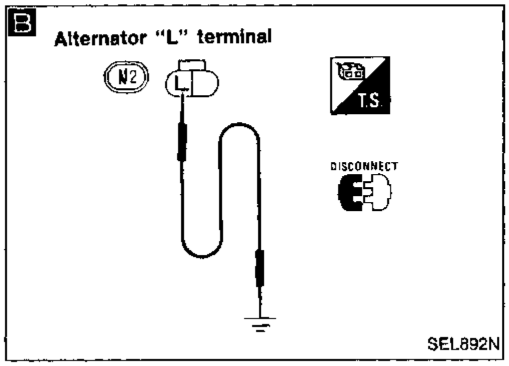
Check headlamp relay, illumination control switch or stop lamp switch.

NG → Replace headlamp, illumination control switch or stop lamp switch.

OK ↓

Repair harness or connector.





Warning Display: LOW BATTERY CHARGE

A

ALTERNATOR INPUT SIGNAL CHECK
Connect control unit harness terminals ⑬ and ① to see if warning display appears.

NG → Replace control unit.

OK ↓

B

ALTERNATOR OUTPUT CHECK
Check if voltage across terminal Ⓛ and body ground is more than 8V when engine is running.

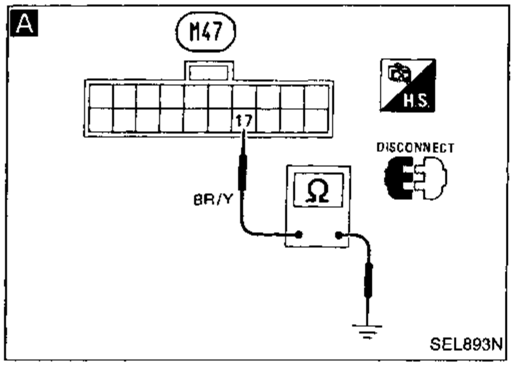
NG → Repair or replace alternator.

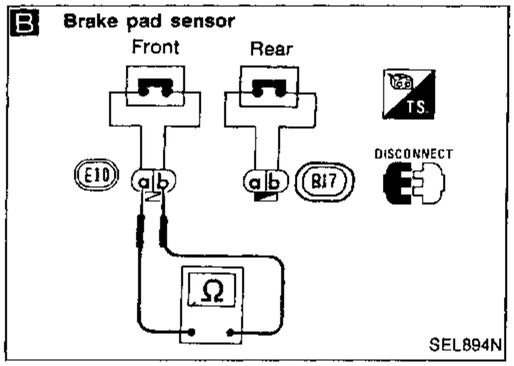
OK ↓

Repair harness and connector between alternator and control unit.

GI
MA
EM
LC
EF & EC
FE
AT
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

Trouble Diagnoses (Cont'd)





Warning Display: BRAKE PADS WORN

A

BRAKE PAD SENSOR
Check continuity between control unit harness terminal ⑰ and body ground.
Continuity exists ... OK

OK → Replace control unit.

NG ↓

B

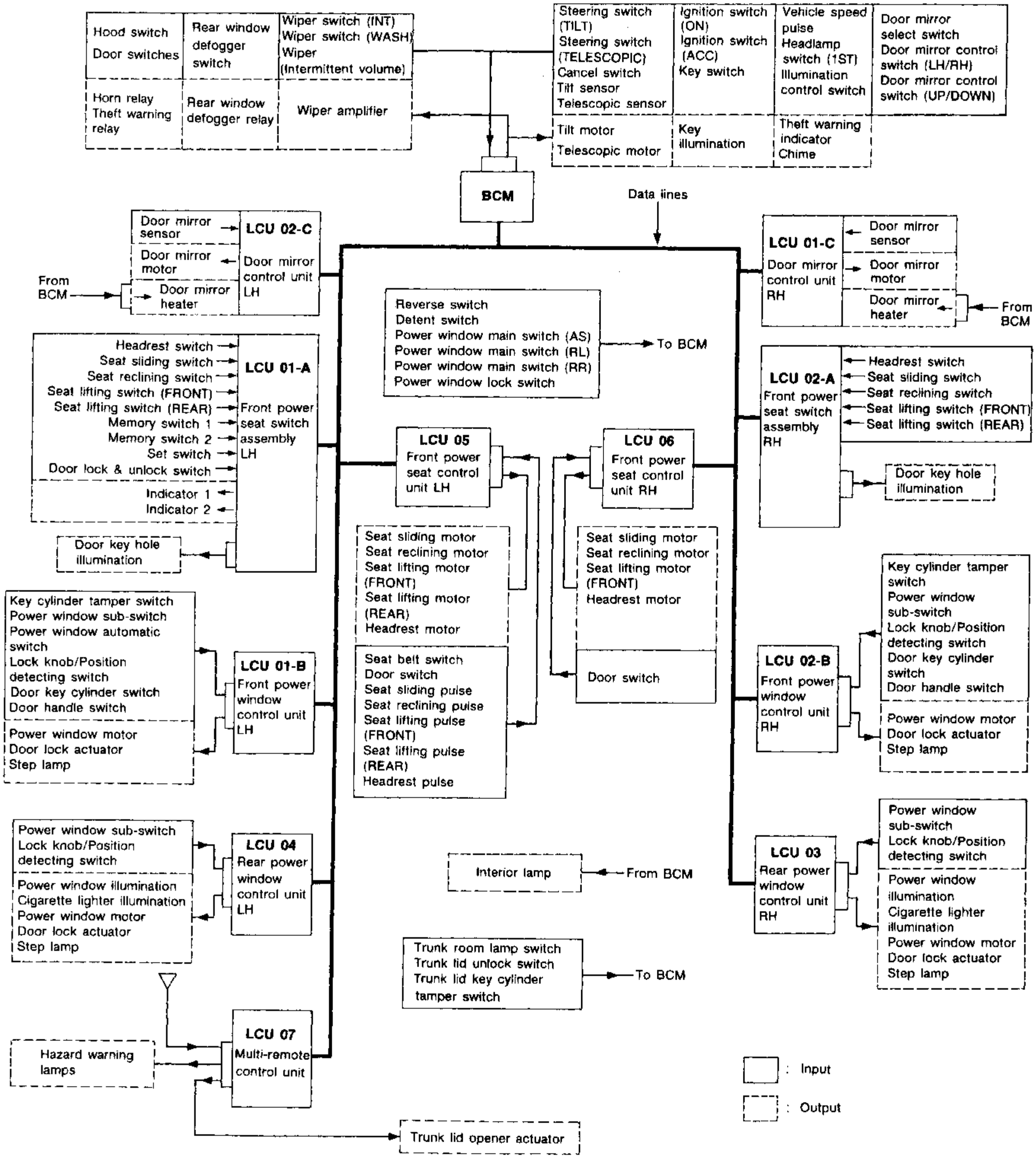
BRAKE PAD SENSOR CHECK
Check continuity between terminals ⓐ and ⓑ.
Continuity exists ... OK

NG → Replace brake pad sensor.

OK ↓

Repair harness or connector.

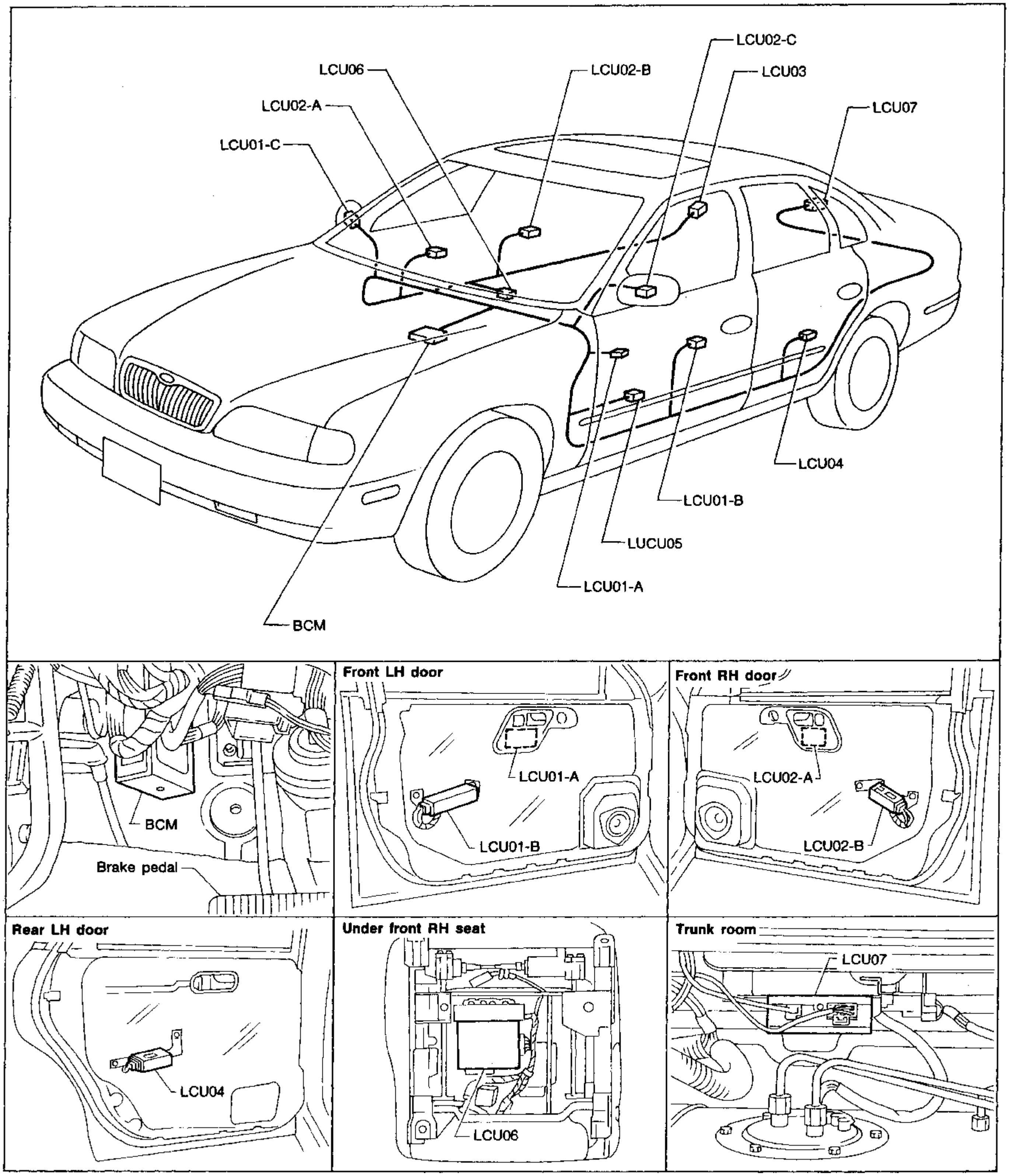
System Diagram



SEL385SA

GI
MA
EM
LC
EF & EC
FE
AT
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

Component Parts Location



Front LH door

Front RH door

Rear LH door

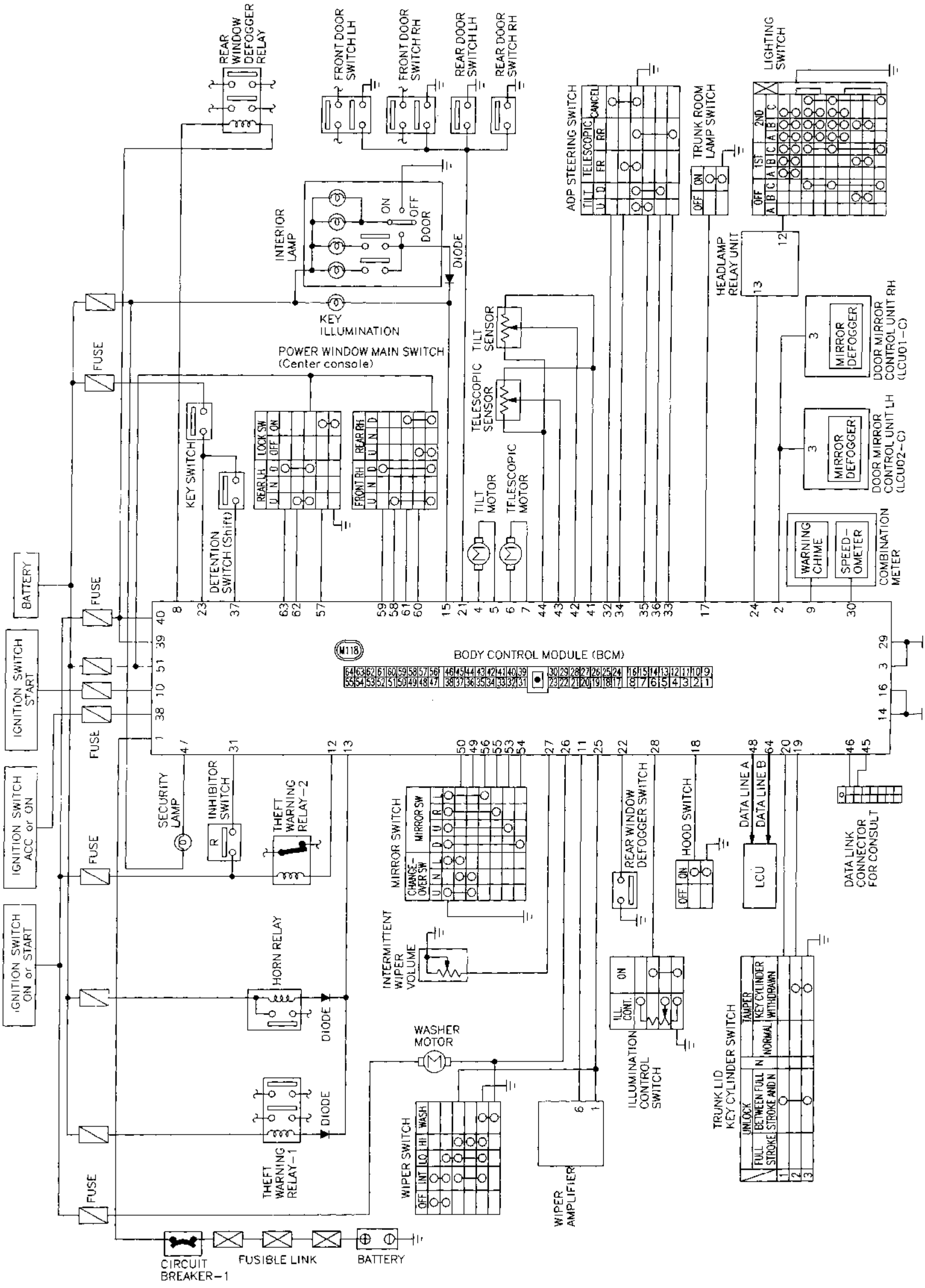
Under front RH seat

Trunk room

SEL386S

Circuit Diagram

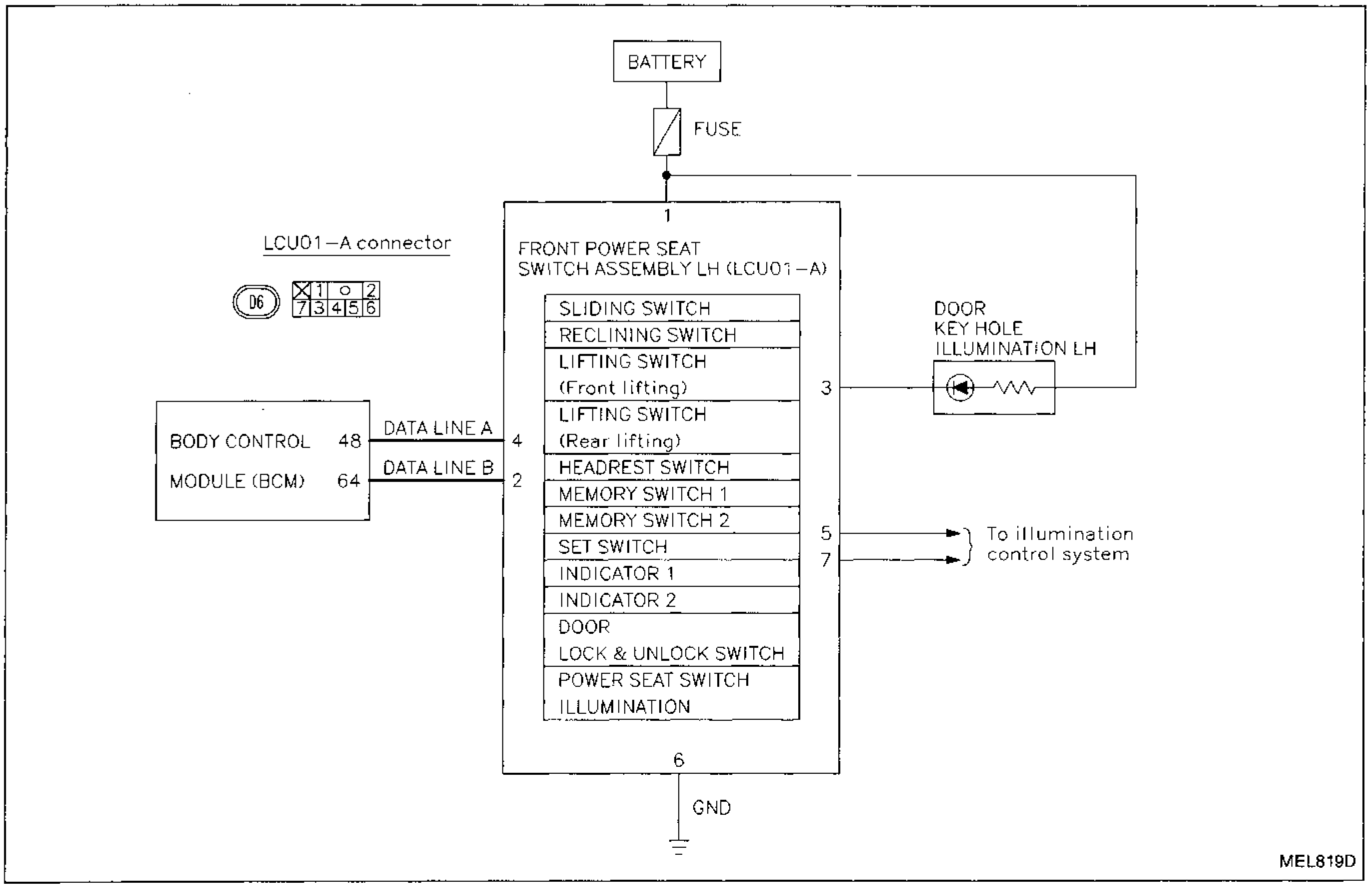
BCM (BODY CONTROL MODULE)



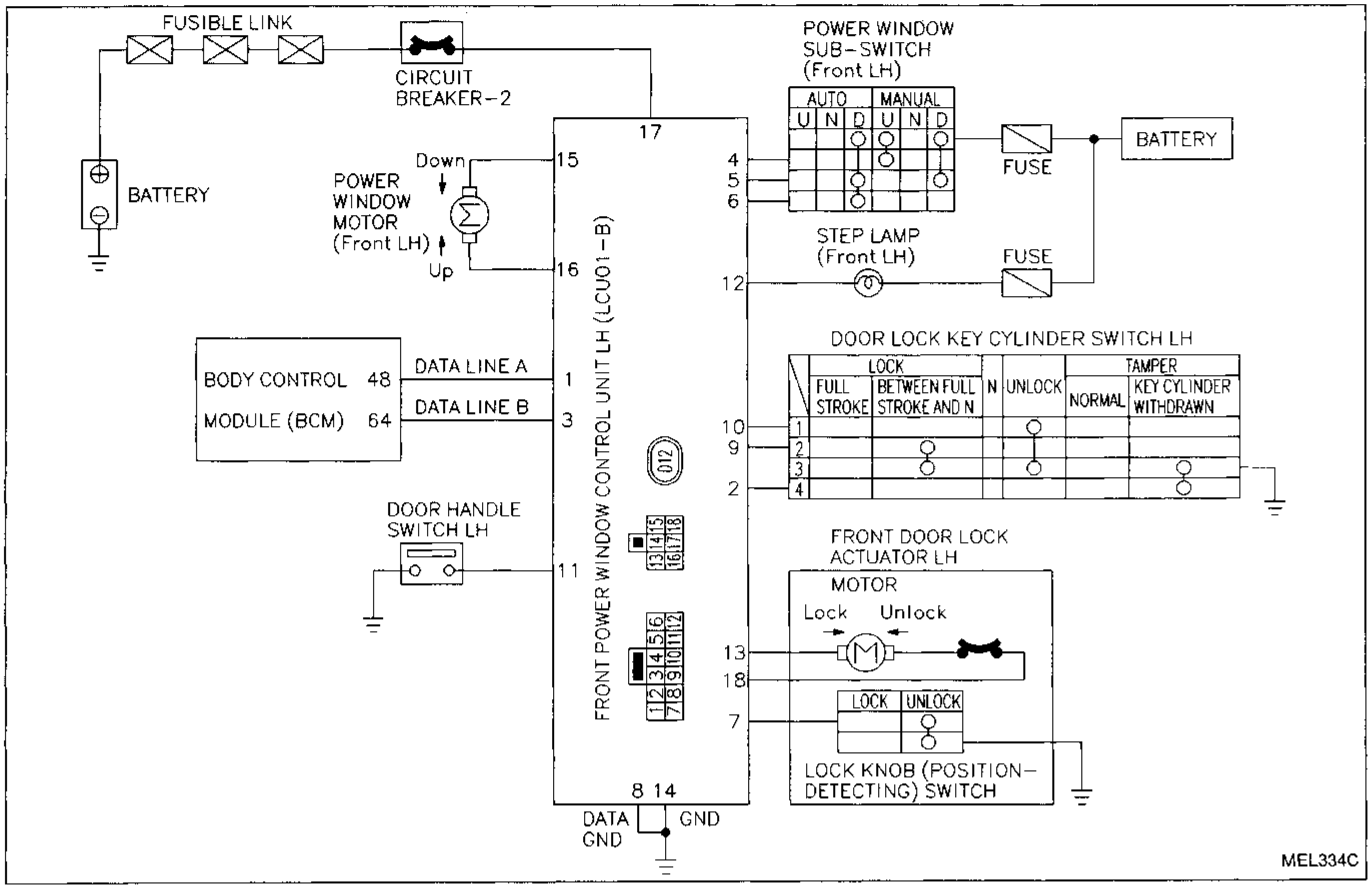
MEL813D

Circuit Diagram (Cont'd)

LCU01-A

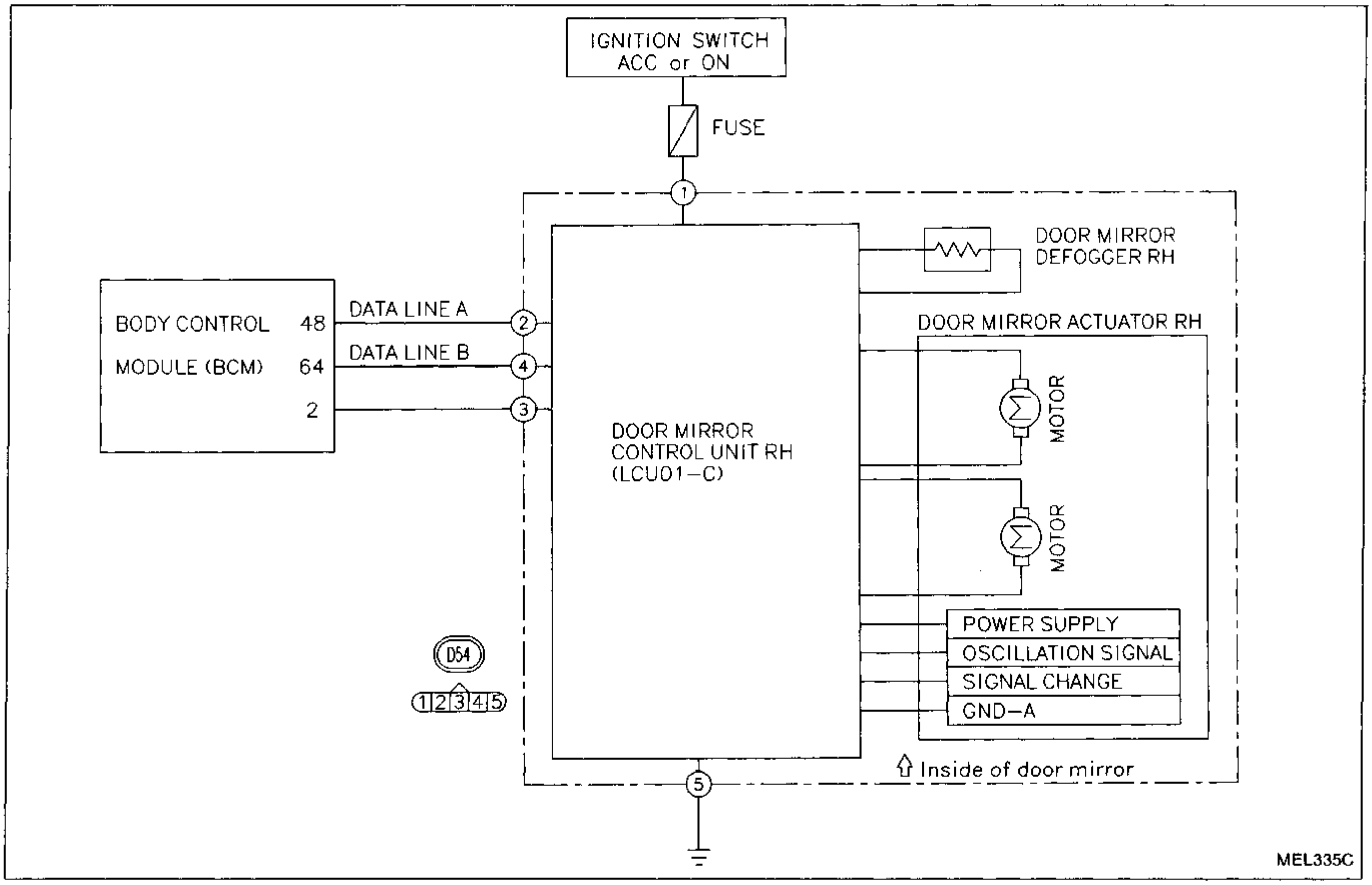


LCU01-B

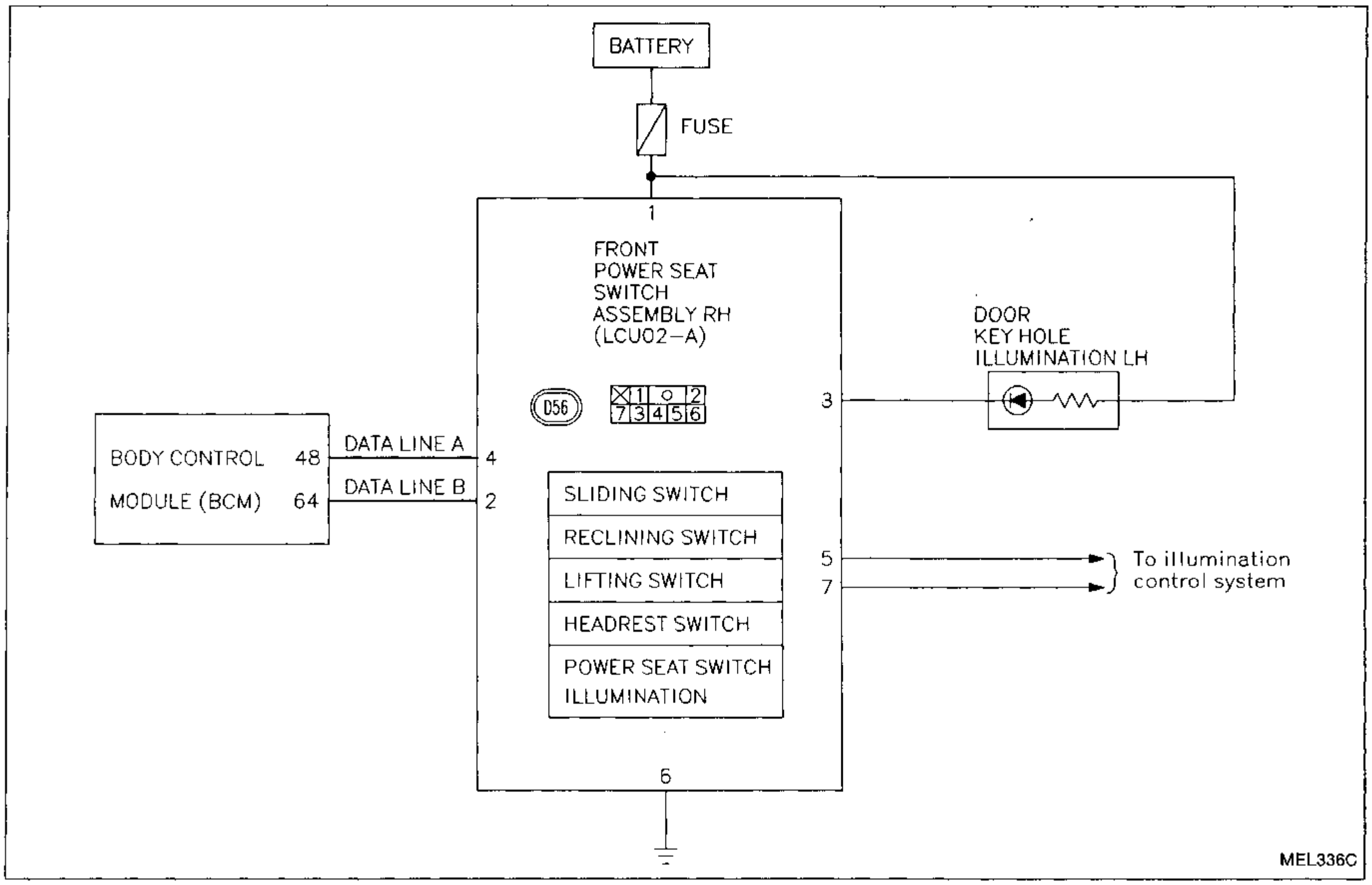


Circuit Diagram (Cont'd)

LCU01-C

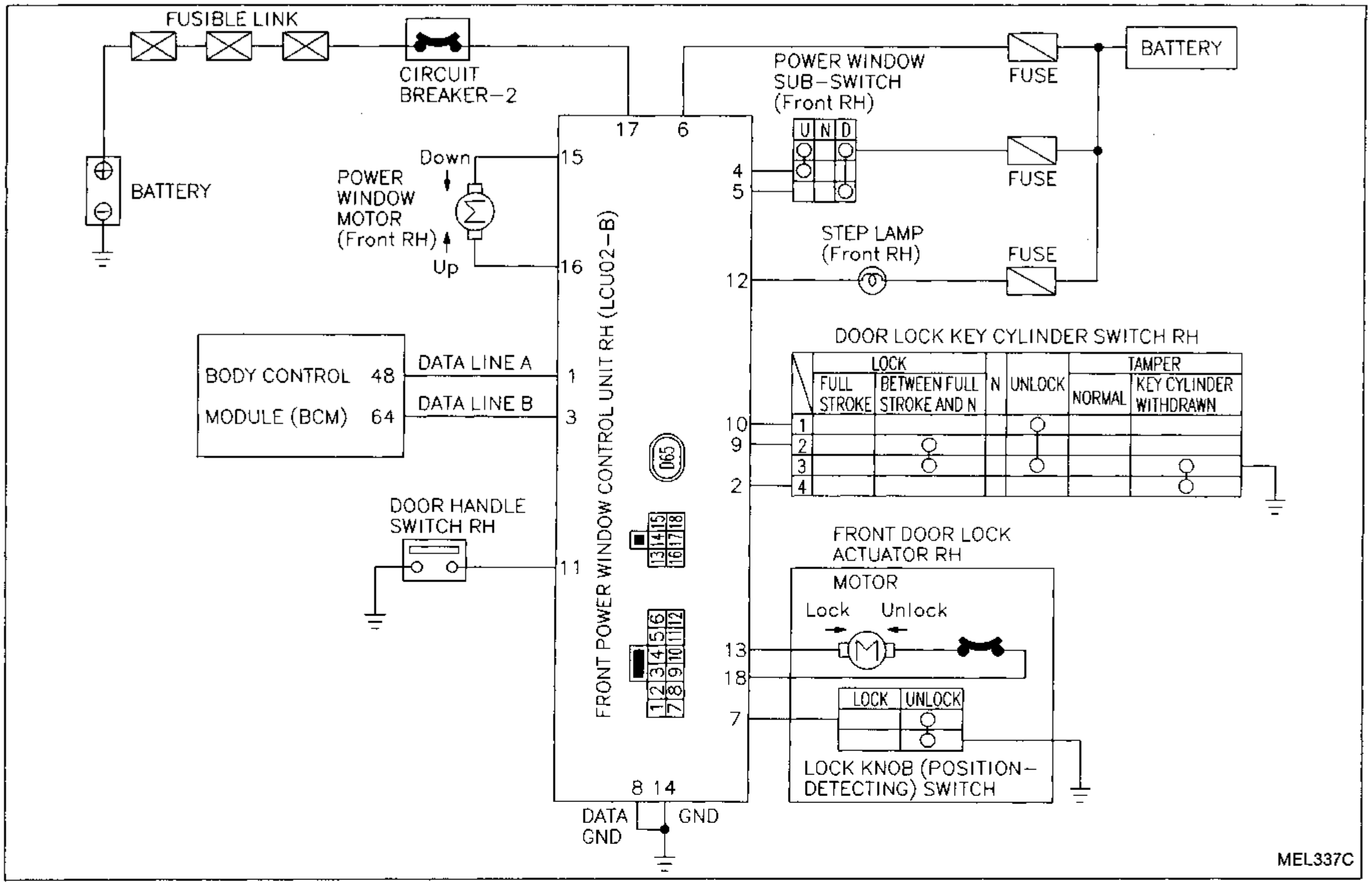


LCU02-A

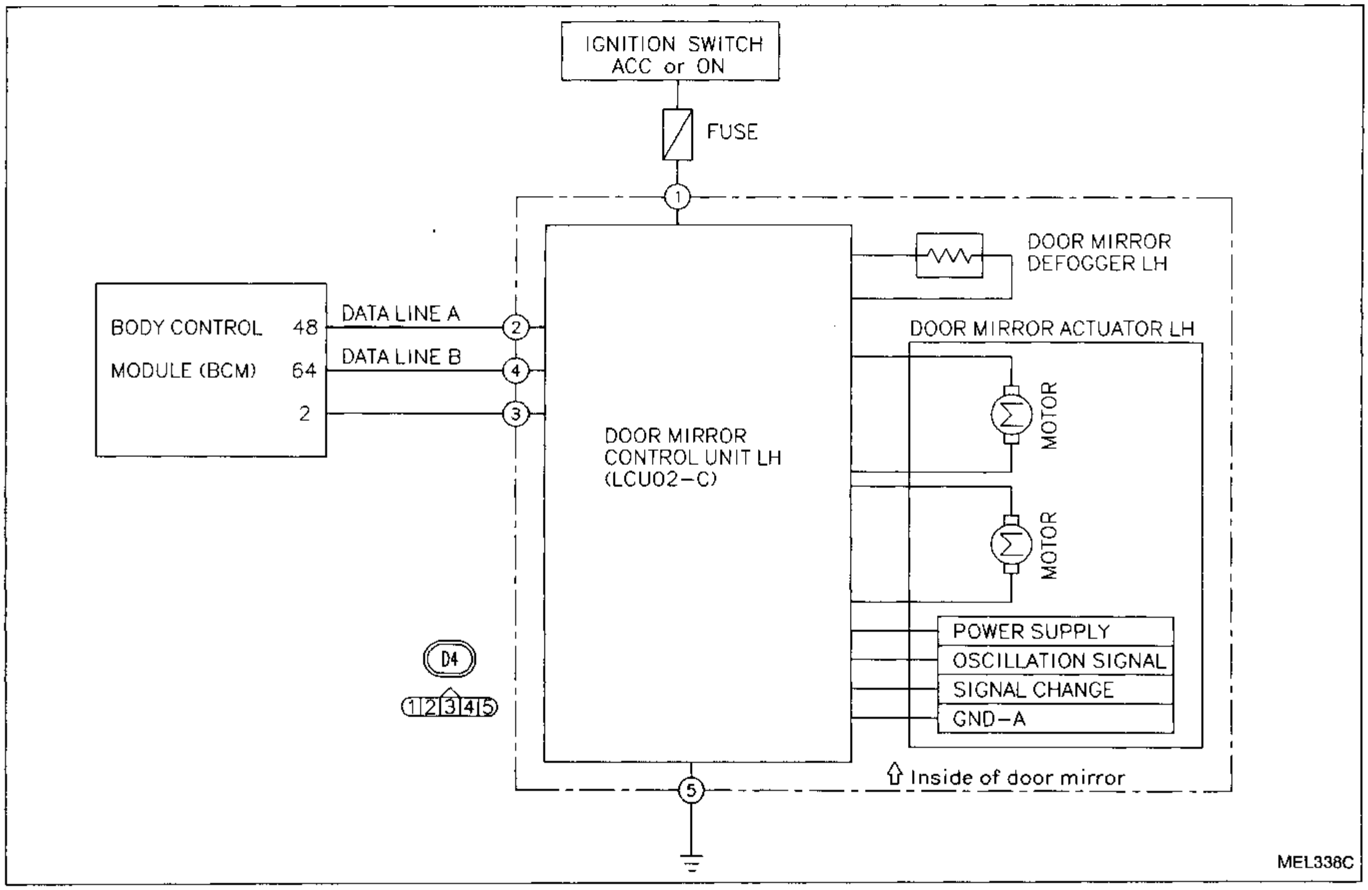


Circuit Diagram (Cont'd)

LCU02-B

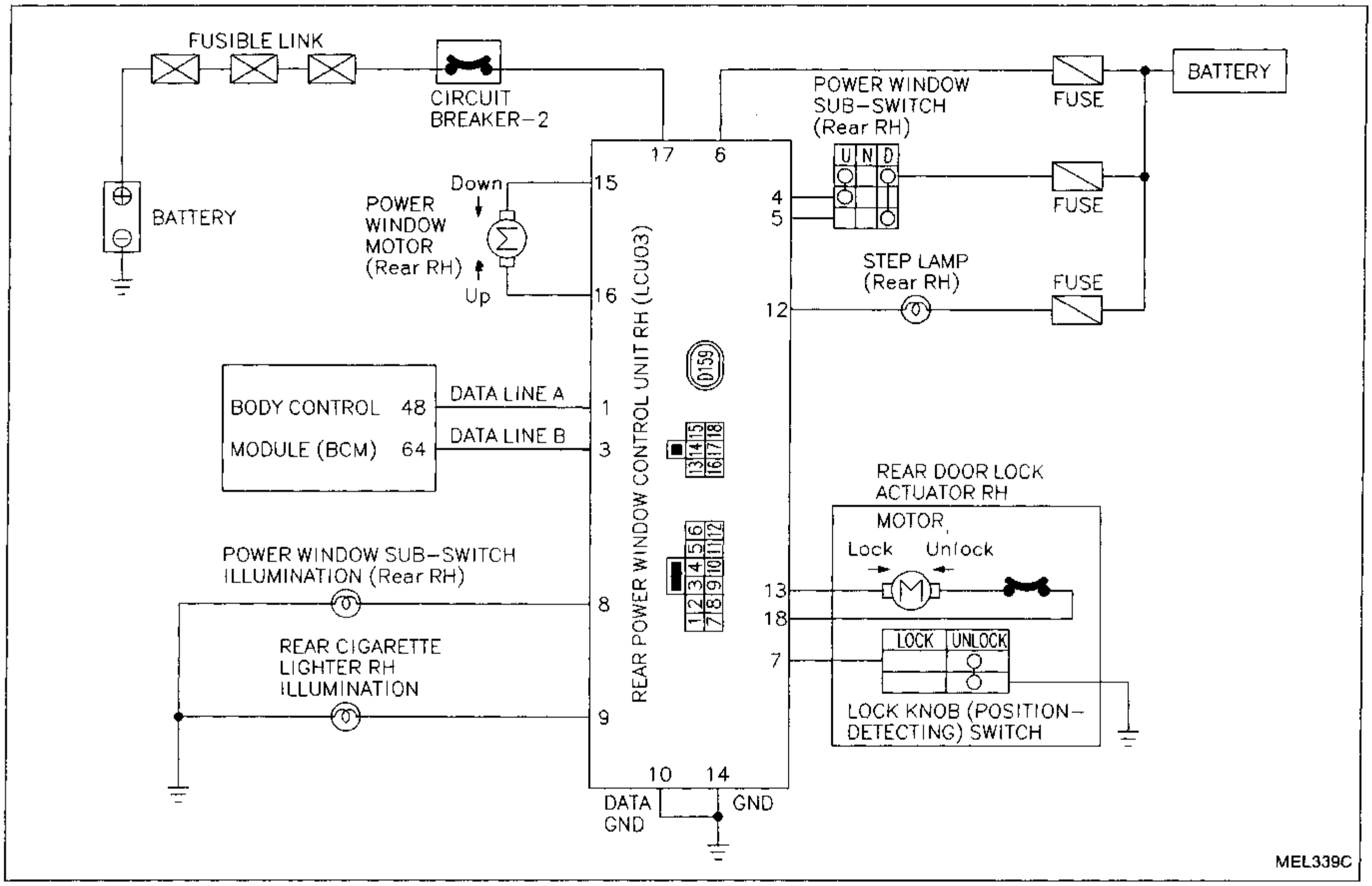


LCU02-C

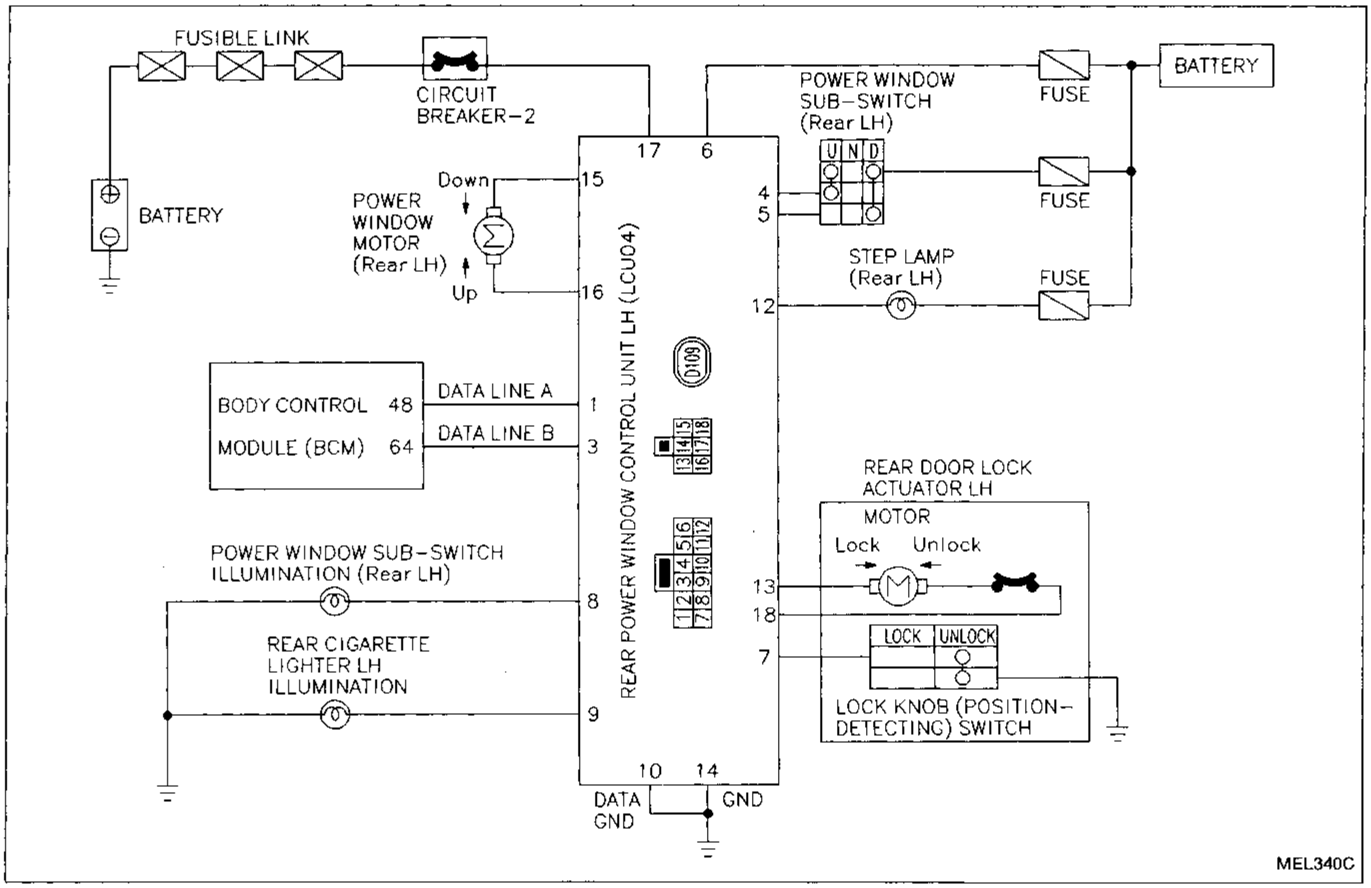


Circuit Diagram (Cont'd)

LCU03

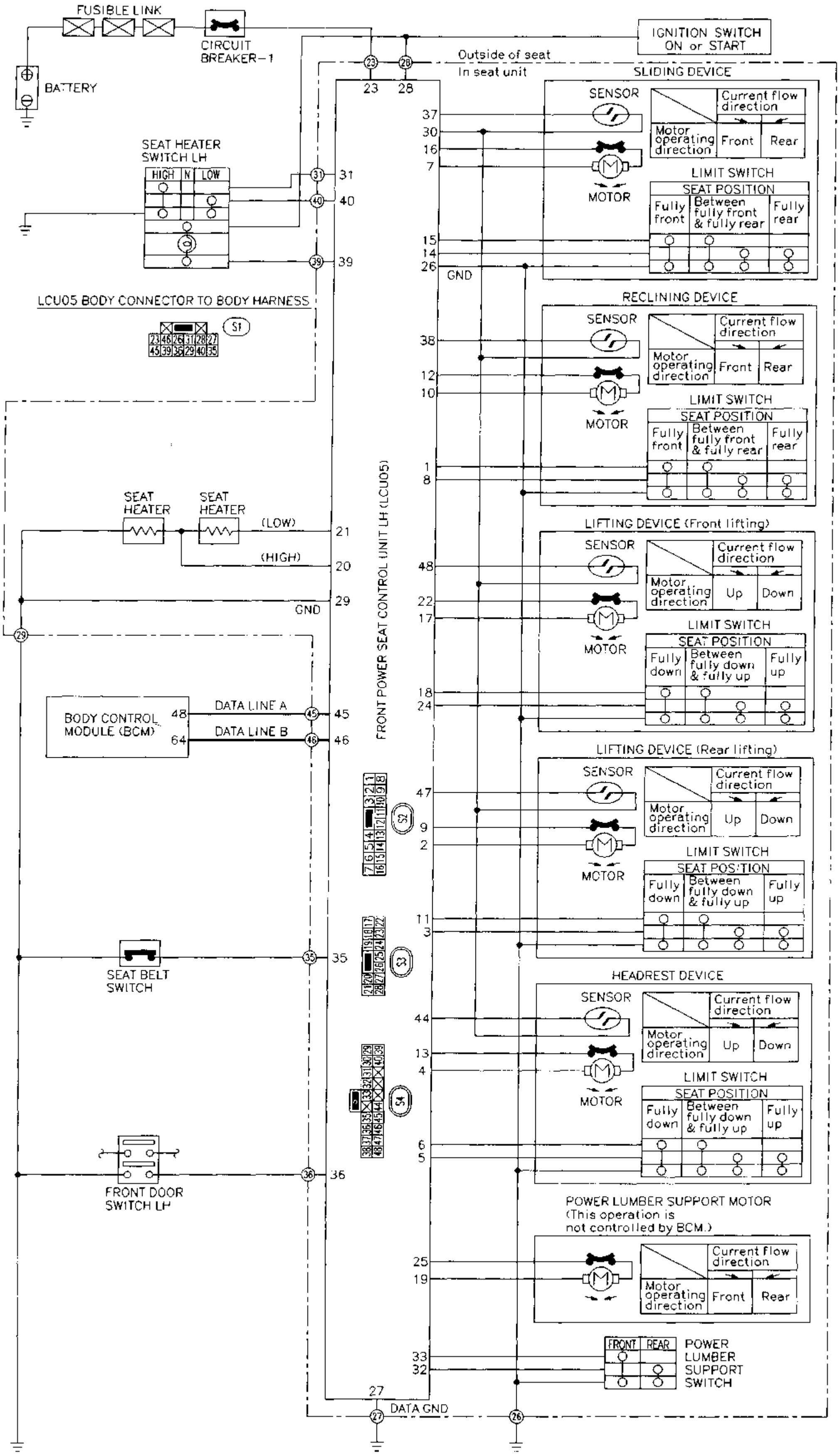


LCU04



Circuit Diagram (Cont'd)

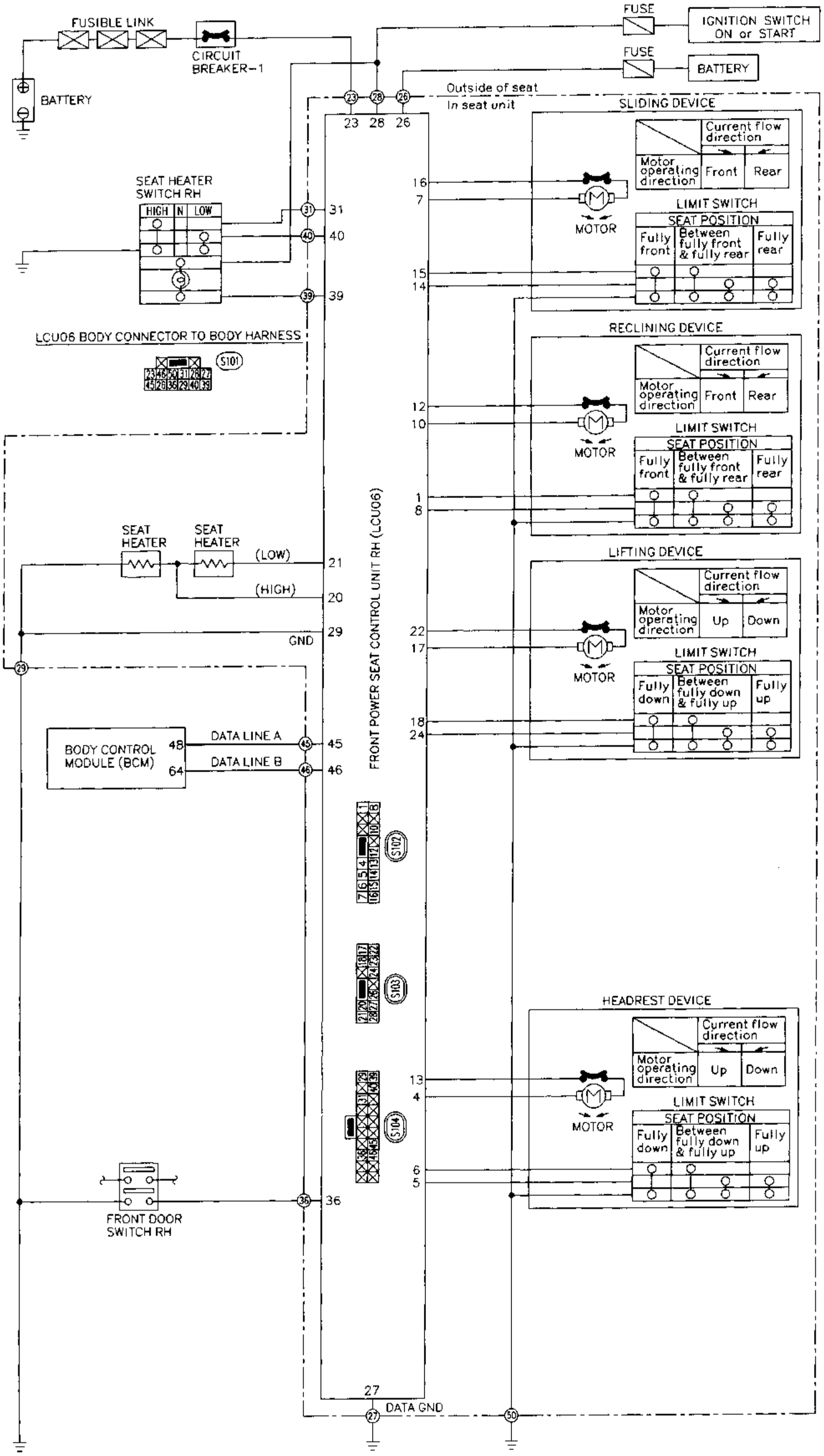
LCU05



MEL820D

Circuit Diagram (Cont'd)

LCU06

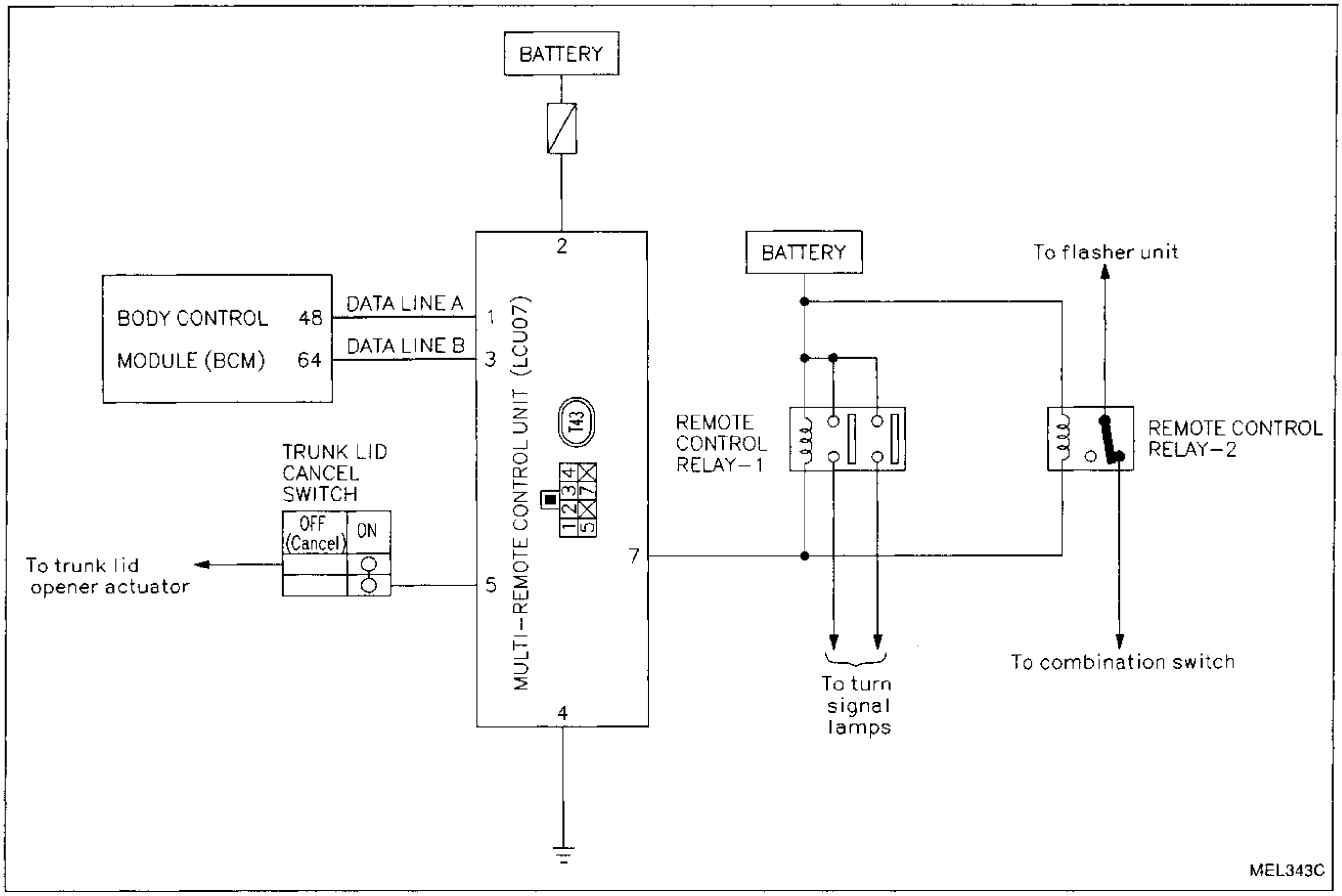


MEL342C

GI
MA
EM
LC
EF & EC
FE
AT
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

Circuit Diagram (Cont'd)

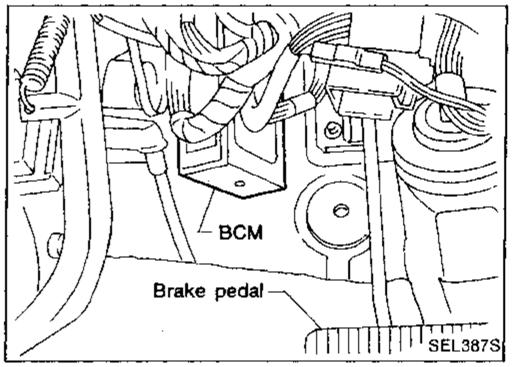
LCU07



Overall Description

OUTLINE

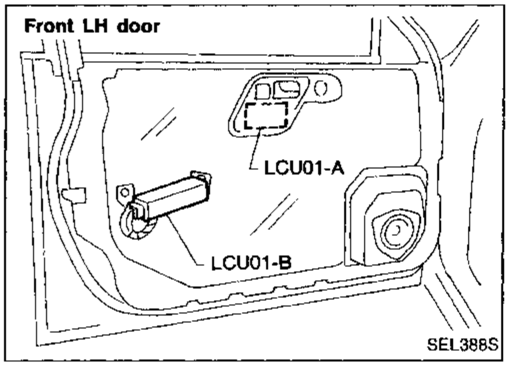
The LAN system consists of a BCM (Body Control Module) and eleven LCU's (Local Control Units). Some switches and electrical loads are connected to each LCU. Some electrical systems are directly connected to the BCM. Control of each LCU, (which is provided by a switch and electrical load), is accomplished by the BCM, via two data lines connected between the two.



BCM (Body Control Module)

The BCM is a master unit of the LAN (Local Area Network) system. It consists of microprocessor, memory and communication LSI sections and has communication and control functions. It receives data signals from the LCUs and sends electrical load data signals to them.

The BCM is described as a "control assembly (for LAN)" in the Parts Catalog.



LCU (Local Control Unit)

The LCU, which is a slave unit of the BCM, has only a communication function. It consists of communication LSI and input-output interface circuits. It receives a data signal from the BCM. It controls the ON/OFF operation of electrical loads and the sleep operation. Also, it sends a switch signal to the BCM.

LCU No. table

LCU No.	Control unit name
LCU 01-A	FRONT POWER SEAT SWITCH ASSEMBLY LH
LCU 01-B	FRONT POWER WINDOW CONTROL UNIT LH
LCU 01-C	DOOR MIRROR CONTROL UNIT RH
LCU 02-A	FRONT POWER SEAT SWITCH ASSEMBLY RH
LCU 02-B	FRONT POWER WINDOW CONTROL UNIT RH
LCU 02-C	DOOR MIRROR CONTROL UNIT LH
LCU 03	REAR POWER WINDOW CONTROL UNIT RH
LCU 04	REAR POWER WINDOW CONTROL UNIT LH
LCU 05	FRONT POWER SEAT CONTROL UNIT LH
LCU 06	FRONT POWER SEAT CONTROL UNIT RH
LCU 07	MULTI-REMOTE CONTROL UNIT

Overall Description (Cont'd)

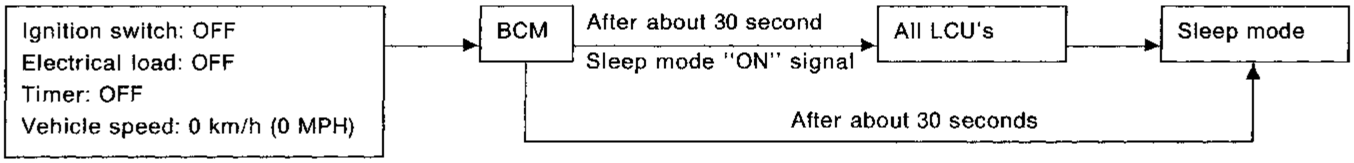
CONTROL SYSTEM

System controlled in LAN system is as follows:

Control system		Remarks	Control unit
Power window control			BCM, LCU 01-B, LCU 02-B, LCU 03, LCU 04, LCU 05
Power door lock control			BCM, LCU 01-A, LCU 01-B, LCU 02-B, LCU 03, LCU 04, LCU 05, LCU 06
Automatic drive positioner control			BCM, LCU 01-A, LCU 01-C, LCU 02-C, LCU 05
Power seat (passenger's seat) control			BCM, LCU 02-A, LCU 06
Time control system	Intermittent wiper control	Including combination wiper-washer switch	BCM, LCU 01-A, LCU 01-B, LCU 01-C, LCU 02-A, LCU 02-B, LCU 02-C, LCU 05, LCU 06
	Rear window defogger timer control	Including door mirror heater timer control	
	Ignition key warning control		
	Light warning control		
	Interior lamp timer control		
	Seat belt timer control	Chime control only	
	Door keyhole illumination control		
Theft warning control			BCM, LCU 01-B, LCU 02-B, LCU 03, LCU 04
Step lamp control			BCM, LCU 01-B, LCU 02-B, LCU 03, LCU 04
Illumination control		Switch illumination, cigarette lighter illumination, etc.	BCM, LCU 03, LCU 04
Door mirror automatic tilt down reverse control			BCM, LCU 01-C, LCU 02-C
Multi-remote control			BCM, LCU 01-B, LCU 02-B, LCU 03, LCU 04, LCU 07

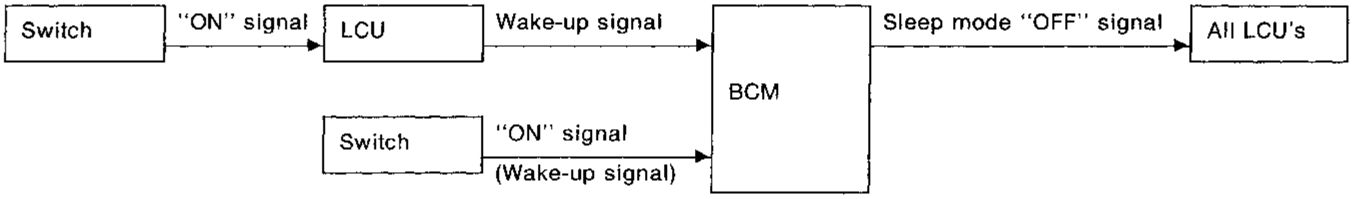
Sleep/Wake-up Control

SLEEP CONTROL



Sleep control prevents unnecessary power consumption. When BCM detects the above condition, the communication between BCM and all LCU's is stopped. Then, it is set in sleep mode after about 30 seconds.

WAKE-UP CONTROL



BCM releases the sleep mode of all LCU's and returns to normal control mode in the following conditions:

1. When BCM detects an ON signal from switches (shown below) which are directly connected to BCM.
2. When BCM detects a wake-up signal from the data line to LCU's.

When BCM detects a key switch OFF signal, it also returns to normal control mode.

Wake-up switch

- Key switch
- Ignition switch (ACC)
- Headlamp switch (1st)
- Illumination control switch
- Door switch
- Steering switch (TILT) (UP/DOWN)
- Steering switch (TELESCOPIC) (FRONT/DOWN)
- Hood switch
- Trunk lid unlock switch
- Trunk lid key cylinder tamper switch
- Trunk room lamp switch

GI
MA
EM
LC
EF &
EC
FE
AT
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

Fail-safe System

SYSTEM DESCRIPTION

Fail-safe system operates when the computing function of the BCM is judged to be malfunctioning.
If BCM sends no signal or an abnormal signal to an LCU 15 times in succession, the LCU is set in a fail-safe condition. During the fail-safe condition, operation of each electrical load is as indicated in the Table below.

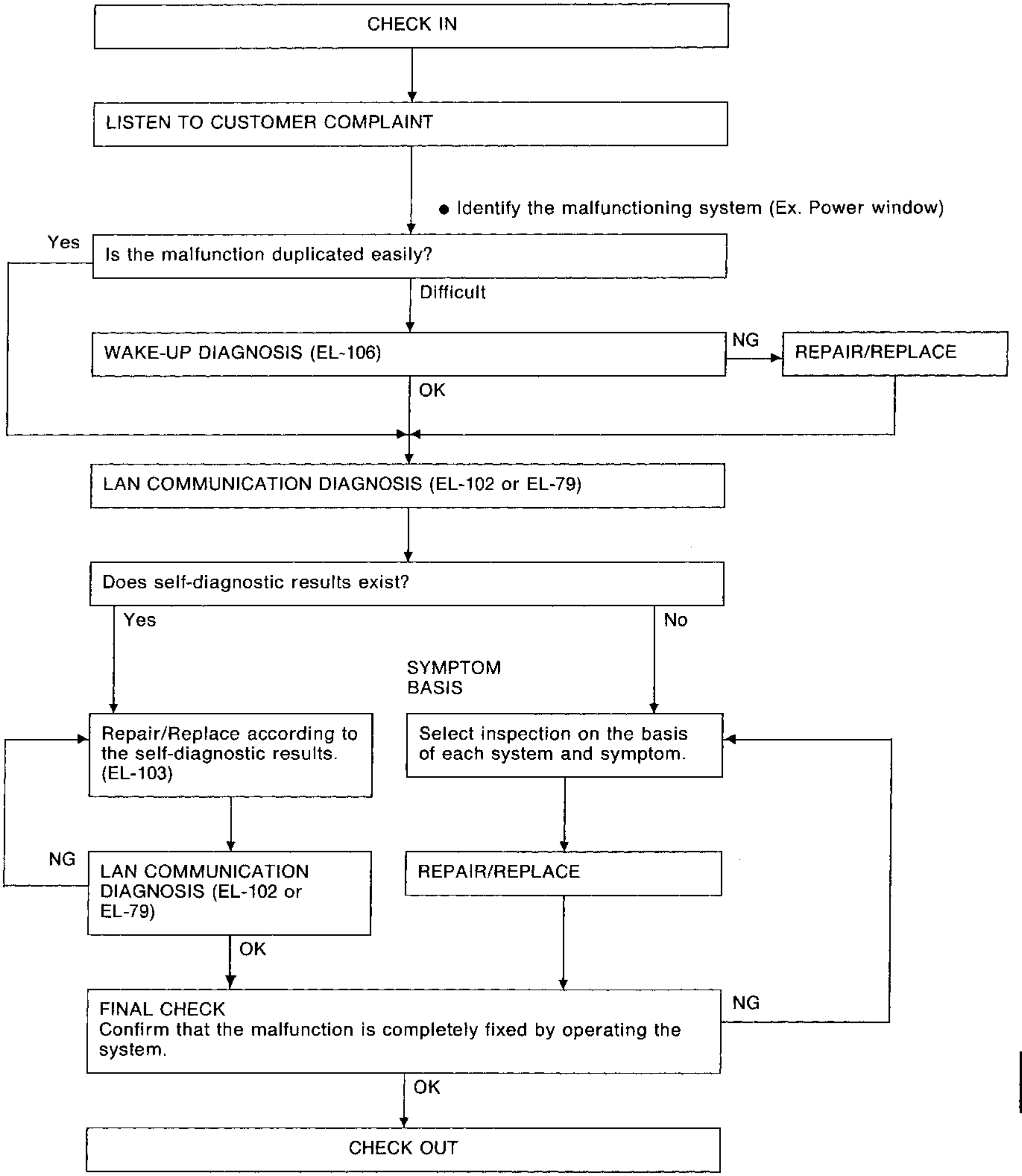
Control system	Electrical load	Operation	Remarks
Power window control	Front power window motor LH (UP/DOWN)	Does not operate	
	Front power window motor RH (UP/DOWN)	Does not operate	
	Rear power window motor LH (UP/DOWN)	Does not operate	
	Rear power window motor RH (UP/DOWN)	Does not operate	
Power door lock control	Door lock motor (DR) (LOCK/UNLOCK)	Does not operate	
	Door lock motor (AS) (LOCK/UNLOCK)	Does not operate	
	Door lock motor (RL) (LOCK/UNLOCK)	Does not operate	
	Door lock motor (RR) (LOCK/UNLOCK)	Does not operate	
Automatic drive positioner control	Tilt motor (UP/DOWN)	Operates	
	Telescopic motor (FRONT/REAR)	Operates	
	Seat sliding motor (FRONT/REAR)	Does not operate	
	Seat reclining motor (FRONT/REAR)	Does not operate	
	Seat lifting front motor (UP/DOWN)	Does not operate	
	Seat lifting rear motor (UP/DOWN)	Does not operate	
	Headrest motor (UP/DOWN)	Does not operate	
	Door mirror motor LH	Does not operate	
	Door mirror motor RH	Does not operate	
	Memory switch indicators	Goes off	
Power seat (passenger's seat) control	Seat sliding motor (FRONT/REAR)	Does not operate	
	Seat reclining motor (FRONT/REAR)	Does not operate	
	Seat lifting front motor (UP/DOWN)	Does not operate	
	Headrest motor (UP/DOWN)	Does not operate	
Intermittent wiper control	Intermittent wiper	Operates	
	Combination wiper-washer switch	Operates	

Fail-safe System (Cont'd)

Control system	Electrical load	Operation	Remarks
Rear window defogger timer control	● Rear window defogger ● Door mirror heater	Operates	
Ignition key warning control	Chime	Operates	
Light warning control	Chime	Operates	
Interior lamp timer control	Interior lamp	Operates	
	Key illumination	Operates	
Seat belt timer control	Chime	Operates	
Door keyhole illumination control	Door keyhole illumination (DR)	Goes off	
	Door keyhole illumination (AS)	Goes off	
Theft warning control	Horn relay	Operates	
	Theft warning relay	Operates	
	Indicator lamp	Operates	
Step lamp control	Step lamp (DR)	Goes off	
	Step lamp (AS)	Goes off	
	Step lamp (RL)	Goes off	
	Step lamp (RR)	Goes off	
Illumination control	Power window switch illumination (RL)	Goes off	
	Power window switch illumination (RR)	Goes off	
Multi-remote control	Trunk lid opener actuator	Does not operate	Cannot be operated by multi-remote controller
	Hazard warning lamps	Does not operate	

NOTE

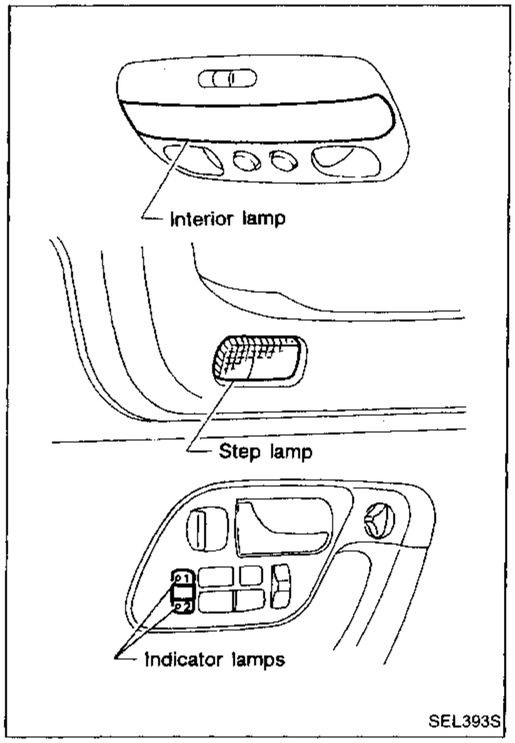
Work Flow



GI
MA
EM
LC
EF &
EC
FE
AT
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

NOTICE:

When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the "disconnected" data will be memorized by the BCM. Therefore, "LAN communication diagnosis" with Consult will indicate "PAST NO RESPONSE" after the LCU connectors are connected.



On-board Diagnosis

SELF-DIAGNOSTIC RESULTS INDICATOR LAMP

A interior lamp, step lamps (all seats) and automatic drive positioner indicator lamps have been adopted on the model. These lamps blink simultaneously in response to self-diagnostic results.

SELF-DIAGNOSTIC FUNCTION

Mode	Function	Self-diagnostic results indicator lamp		
		Interior lamp	Step lamps (all seats)	Automatic drive positioner indicator lamps
Mode I	LAN communication diagnosis	X	X	X
Mode II	Switch monitor	X	X	X
Mode III	Power door lock operation	X	X	X
Mode IV	Power window monitor	X	X	X
Mode V	Automatic drive positioner operation	—	—	X

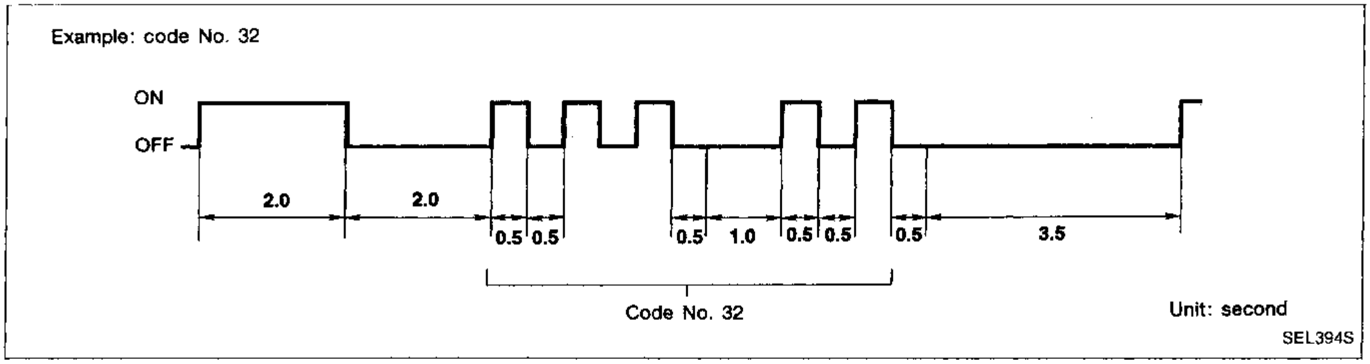
X : applicable

—: not applicable

On-board Diagnosis — Mode I (LAN communication diagnosis)

DESCRIPTION

In this mode, a malfunction code is indicated by the number of flashes of the following: Interior lamp, each seat's step lamp and automatic drive positioner indicator lamps.



After indicator lamp turns on for 2 seconds then off for 2 seconds, it flashes [cycling ON (0.5 sec.)/OFF (0.5 sec.)] to indicate the first digit of a malfunction code. Then, 1 second after indicator lamp turns off, it again flashes [cycling ON (0.5 sec.)/OFF (0.5 sec.)] to indicate the 2nd digit of a malfunction code.
For example, the indicator lamp goes on and off for 0.5 seconds three times. After 1.0 seconds, it goes on and off for 0.5 seconds twice. This indicates malfunction code "32". The self-diagnostic results will remain in the BCM memory.

Malfunction code table

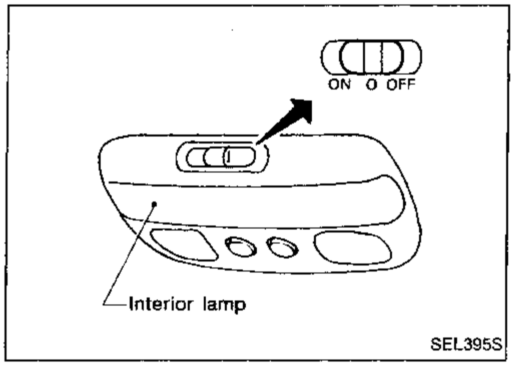
Code No.	Detected items
11	No malfunction in the following circuit
21	LCU 01-A (Both data lines: Communication failure)
22	LCU 01-A (Data line A: No response)
23	LCU 01-A (Data line B: No response)
24	LCU 01-B (Both data lines: Communication failure)
25	LCU 01-B (Data line A: No response)
26	LCU 01-B (Data line B: No response)
27	LCU 01-C (Both data lines: Communication failure)
28	LCU 01-C (Data line A: No response)
29	LCU 01-C (Data line B: No response)
31	LCU 02-A (Both data lines: Communication failure)
32	LCU 02-A (Data line A: No response)
33	LCU 02-A (Data line B: No response)
34	LCU 02-B (Both data lines: Communication failure)
35	LCU 02-B (Data line A: No response)
36	LCU 02-B (Data line B: No response)
37	LCU 02-C (Both data lines: Communication failure)
38	LCU 02-C (Data line A: No response)
39	LCU 02-C (Data line B: No response)
41	LCU 03 (Both data lines: Communication failure)
42	LCU 03 (Data line A: No response)
43	LCU 03 (Data line B: No response)
44	LCU 04 (Both data lines: Communication failure)

On-board Diagnosis — Mode I (LAN communication diagnosis) (Cont'd)

Code No.	Detected items
45	LCU 04 (Data line A: No response)
46	LCU 04 (Data line B: No response)
47	LCU 05 (Both data lines: Communication failure)
48	LCU 05 (Data line A: No response)
49	LCU 05 (Data line B: No response)
51	LCU 06 (Both data lines: Communication failure)
52	LCU 06 (Data line A: No response)
53	LCU 06 (Data line B: No response)
54	LCU 07 (Both data lines: Communication failure)
55	LCU 07 (Data line A: No response)
56	LCU 07 (Data line B: No response)

On-board Diagnosis — Mode I (LAN communication diagnosis) (Cont'd)

HOW TO PERFORM MODE I



Condition
- Ignition switch: OFF
- Shift lever: "P" range
- Power window lock switch: OFF
- Doors: Closed
- Interior lamp: Center "O" position

↓

Turn ignition switch "ON".

↓

Return ignition switch to "OFF" and press rear window defogger switch more than 10 times during 10 seconds.

↓

Self-diagnostic results indicator lamps should go on.

↓

Turn ignition switch "ON" when the indicator lamps are on.

↓

Mode I should be performed.

↓

Turn ignition switch "OFF".

↓

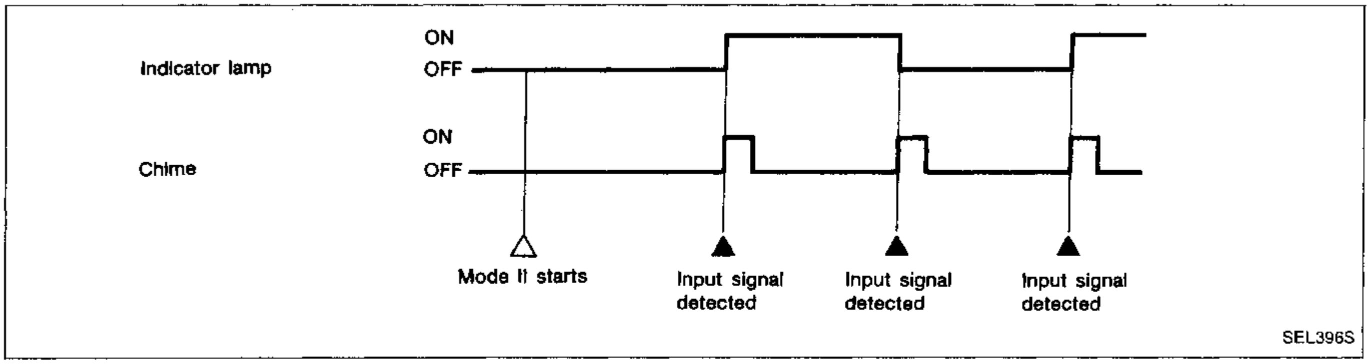
DIAGNOSIS END*

*: Diagnosis ends after self-diagnostic results have been indicated for 10 minutes if left unattended.

On-board Diagnosis — Mode II (Switch monitor)

DESCRIPTION

In this mode, when BCM detects the input signal from a switch in LAN as shown below, the detection is indicated by an interior lamp, each seat's step lamp and automatic drive positioner indicator lamps with chime.



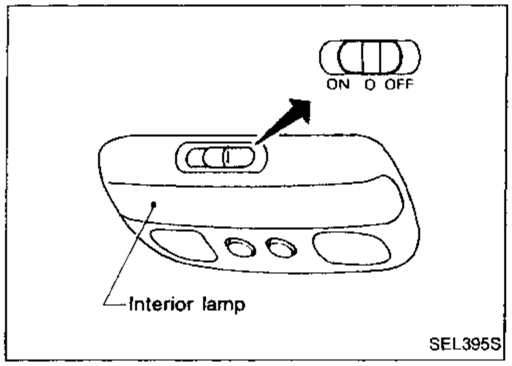
Switch monitor item

BCM	• Hood switch • Trunk room lamp switch • Trunk lid key cylinder tamper switch • Trunk lid unlock switch • Door switches • Rear window defogger switch • Headlamp switch (1st) • Wiper switch (INT) • Wiper switch (WASH) • Illumination control switch • Automatic drive positioner cancel switch • Steering switch (TILT) (UP/DOWN) • Steering switch (TELESCOPIC) (FRONT/REAR) • Door mirror select switch (LH/RH) • Door mirror control switch (LH/RH) • Door mirror control switch (UP/DOWN) • Power window lock switch • Power window main switches (UP/DOWN)
LCU 01-A	• Headrest switch (UP/DOWN) • Seat sliding switch (FRONT/REAR) • Seat reclining switch (FRONT/REAR) • Seat lifting switch FR (UP/DOWN) • Seat lifting switch RR (UP/DOWN) • Memory switch 1 • Memory switch 2 • Set switch • Door lock & unlock switch (LOCK/UNLOCK)

LCU 01-B	• Power window sub-switch (UP/DOWN) • Power window automatic switch • Door key cylinder switch • Key cylinder tamper switch • Lock knob/Position detecting switch • Door handle switch
LCU 02-A	• Headrest switch (UP/DOWN) • Seat sliding switch (FRONT/REAR) • Seat reclining switch (FRONT/REAR) • Seat lifting switch FR (UP/DOWN) • Seat lifting switch RR (UP/DOWN)
LCU 02-B	• Door key cylinder switch • Key cylinder tamper switch • Lock knob/Position detecting switch • Power window sub-switch (UP/DOWN) • Door handle switch
LCU 03	• Power window sub-switch (UP/DOWN) • Lock knob/Position detecting switch
LCU 04	• Power window sub-switch (UP/DOWN) • Lock knob/Position detecting switch
LCU 05	• Door switch • Seat belt switch
LCU 06	• Door switch
LCU 07	• Door lock button • Door unlock button • Interior lamp button • Trunk lid opener button

On-board Diagnosis — Mode II (Switch monitor) (Cont'd)

HOW TO PERFORM MODE II



Condition
- Ignition switch: OFF
- Shift lever: "P" range
- Power window lock switch: OFF
- Doors: Closed
- Interior lamp: Center "O" position

↓

Turn ignition switch "ON".

↓

Return ignition switch to "OFF" and press rear window defogger switch more than 10 times during 10 seconds.

↓

Self-diagnostic results indicator lamps should go on.

↓

Keep the rear window defogger switch pressed in, and turn ignition switch "ON" when the indicator lamps are on.

↓

Mode II should be performed.

↓

Turn ignition switch "OFF".

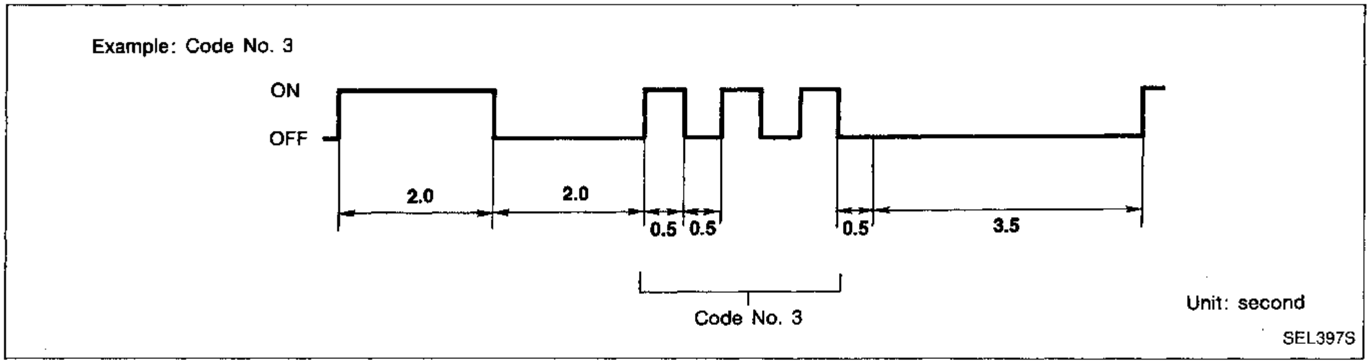
↓

DIAGNOSIS END

On-board Diagnosis — Mode III (Power door lock operation)

DESCRIPTION

In this mode, a malfunction code is indicated by the number of flashes from the interior lamp, each seat's step lamp and automatic drive positioner indicator lamps as shown below:



After indicator lamp turns ON for 2 seconds and then turns OFF, it flashes to indicate a malfunction code. For example, the indicator lamp goes on and off for 0.5 seconds three times. This indicates malfunction code "3".

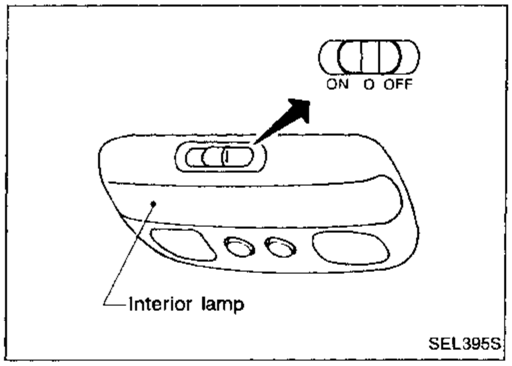
The self-diagnostic results will remain in the BCM memory.

Malfunction code table

Code No.	Detected items	Repair order
1	Front LH door lock motor circuit	1. Visually check the wiring harness connections. 2. Diagnose the door lock motor circuit referring to the DIAGNOSTIC PROCEDURE 4, 5 of POWER DOOR LOCK — LAN (EL-116).
2	Front RH door lock motor circuit	
3	Rear RH door lock motor circuit	
4	Rear LH door lock motor circuit	
9	No malfunction in the above circuit	—

On-board Diagnosis — Mode III (Power door lock operation) (Cont'd)

HOW TO PERFORM MODE III



Condition
- Ignition switch: OFF
- Power window lock switch: ON
- Doors: Closed
- Interior lamp: Center "O" position

↓

Turn ignition switch "ON".

↓

Return ignition switch to "OFF" and press rear window defogger switch more than 10 times during 10 seconds.

↓

Self-diagnostic results indicator lamps should go on.

↓

Turn ignition switch "ON" when the indicator lamps are on.

↓

Mode III should be performed.

↓

Turn ignition switch "OFF".

↓

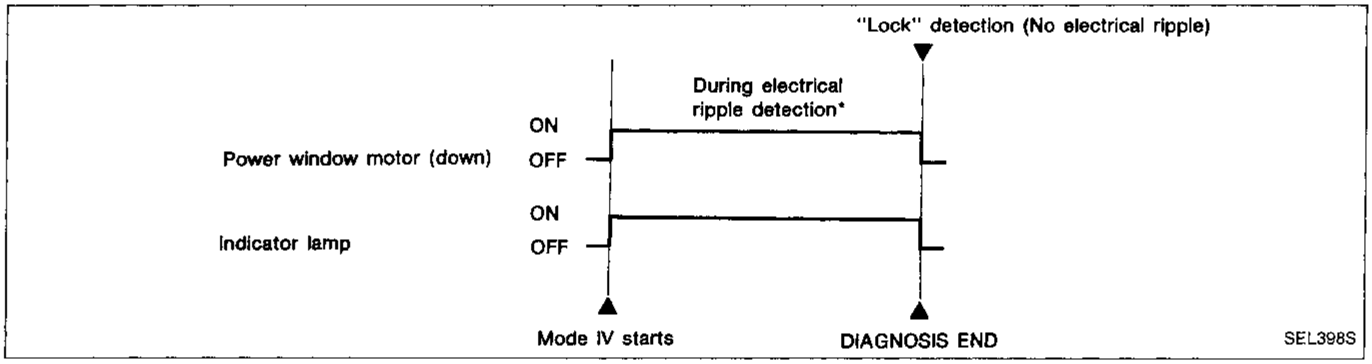
DIAGNOSIS END*

*: Diagnosis ends after self-diagnostic results have been indicated for 10 minutes if left unattended.

On-board Diagnosis — Mode IV (Power window monitor)

DESCRIPTION

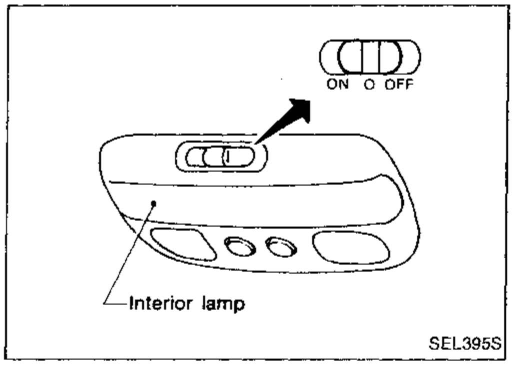
In mode IV, front LH window is automatically operated. In conjunction with power window motor (DOWN) "ON", indicator lamps (interior lamp, each seat's step lamp and automatic drive positioner indicator lamps) go on. When power window "lock" is detected, power window motor will stop and the indicator lamps will go off.



NOTE: As soon as manual switches (each seat's power window switch, power window center console switch) turn ON, front LH power window motor (DOWN) stops and diagnosis ends.

* While power window motor is being operated, electrical ripple occurs.

On-board Diagnosis — Mode IV (Power window monitor) (Cont'd)



HOW TO PERFORM MODE IV

Condition
- Ignition switch: OFF
- Shift lever: "P" range
- Power window lock switch: ON
- Front LH window: Closed
- Doors: Closed
- Interior lamp: Center "O" position

↓

Turn ignition switch "ON".

↓

Return ignition switch to "OFF" and press rear window defogger switch more than 10 times during 10 seconds.

↓

Self-diagnostic results indicator lamps should go on.

↓

Keep the rear window defogger switch pressed in, and turn ignition switch "ON" when the indicator lamps are on.

↓

Mode IV should be performed.

↓

Turn ignition switch "OFF".

↓

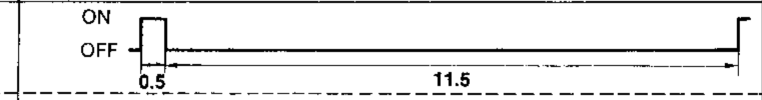
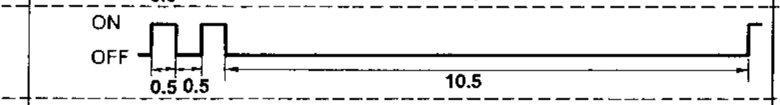
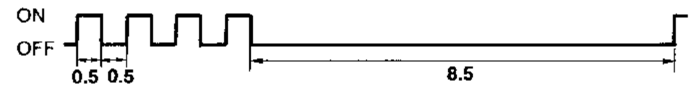
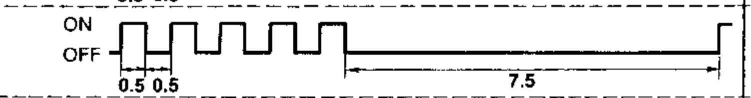
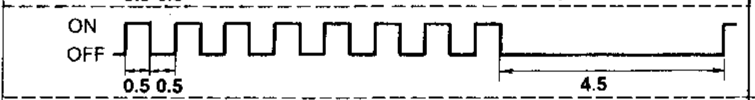
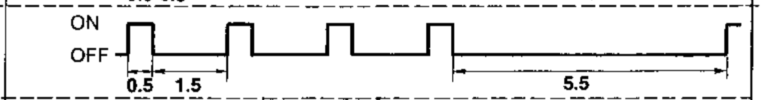
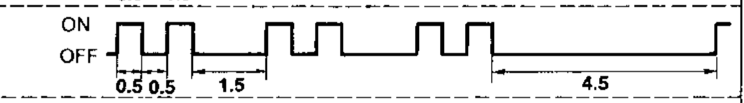
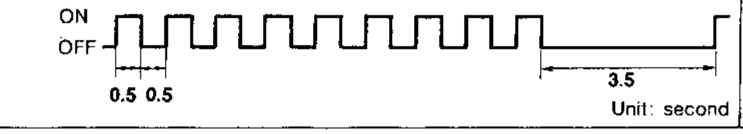
DIAGNOSIS END*

*: Diagnosis ends after self-diagnostic results have been indicated for 10 minutes if left unattended.

On-board Diagnosis — Mode V (Automatic drive positioner operation)

DESCRIPTION

In this mode, a malfunction code is indicated by the number of flashes from the automatic drive positioner indicator lamps (indicator lamp 1, indicator lamp 2) as shown below:
The self-diagnostic results will remain in the BCM memory.

Diagnostic item	Indication	Repair order
Seat sliding circuit		DIAGNOSTIC PROCEDURE 6-1 of AUTOMATIC DRIVE POSITIONER — LAN
Seat reclining circuit		DIAGNOSTIC PROCEDURE 6-2 of AUTOMATIC DRIVE POSITIONER — LAN
Seat lifting circuit (FRONT)		DIAGNOSTIC PROCEDURE 6-3 of AUTOMATIC DRIVE POSITIONER — LAN
Seat lifting circuit (REAR)		DIAGNOSTIC PROCEDURE 6-4 of AUTOMATIC DRIVE POSITIONER — LAN
Headrest circuit (UP/DOWN)		DIAGNOSTIC PROCEDURE 6-5 of AUTOMATIC DRIVE POSITIONER — LAN
Telescopic circuit		DIAGNOSTIC PROCEDURE 3 of AUTOMATIC DRIVE POSITIONER — LAN
Tilt circuit		
Door mirror circuit (UP/DOWN)*		DIAGNOSTIC PROCEDURE 7 of AUTOMATIC DRIVE POSITIONER — LAN
Door mirror circuit (LH/RH)*		
Vehicle speed sensor circuit		DIAGNOSTIC PROCEDURE 2 of AUTOMATIC DRIVE POSITIONER — LAN

SEL186T

*: In the case that only LH door mirror malfunctions, the indicator lamp 1 goes on and off. In the case that only RH door mirror malfunctions, the indicator lamp 2 goes on and off.

On-board Diagnosis — Mode V (Automatic drive positioner operation) (Cont'd)

HOW TO PERFORM MODE V

Condition
- Ignition switch: OFF
- Shift lever: "P" range

↓

Turn ignition switch "ON".

↓ Within 5 seconds

Push memory set switch and two memory switches at the same time for more than 2 seconds.

↓

Mode V should be performed.
— Two indicator lamps should go on. (At the same time, driver's seat, steering column and door mirror move automatically.)

↓

As soon as the indicator lamps go on and off by turns, start engine.

↓

Accelerate vehicle up to 7 km/h (4 MPH) and stop.
Do not stop engine.

↓

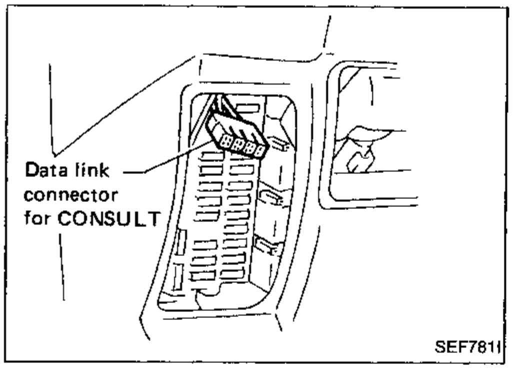
If a circuit malfunctions, a malfunction code should be indicated.

↓

Stop the engine.

↓

DIAGNOSIS END

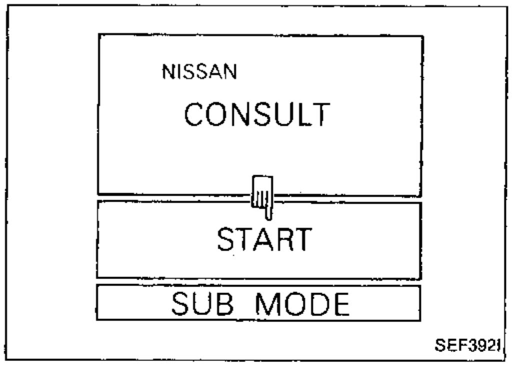


SEF781I

Consult

CONSULT INSPECTION PROCEDURE

1. Turn ignition switch "OFF".
2. Connect "CONSULT" to data link connector for CONSULT. (Data link for connector for CONSULT is located in left dash side panel.)

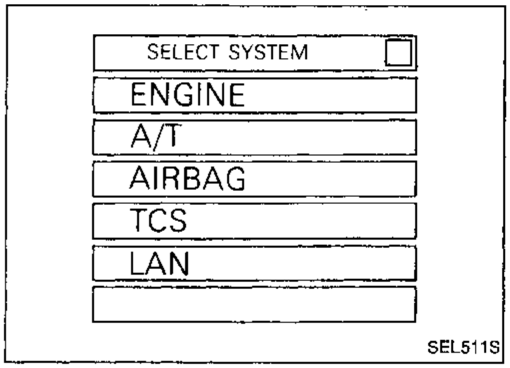


SEF392I

3. Turn ignition switch "ON".
4. Touch "START".

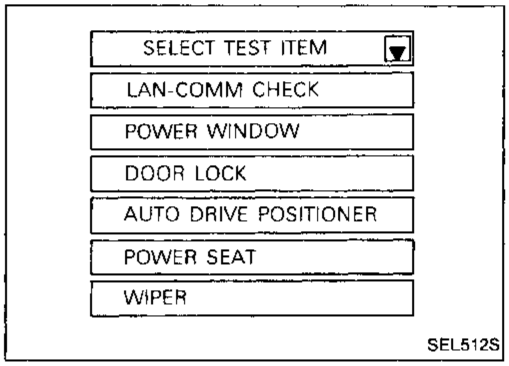
NOTICE: If electrical loads are operating under the conditions indicated in the following table, touch "START". Then, their operational modes will change until "SELECT SYSTEM" is shown on the display.

Condition	Operation after touching "START"
Power window: Operating in "AUTO"	Stops.
Auto drive positioner: Operating in "AUTO"	Stops.
Intermittent wiper: Operating	Irregular intermittent time
Rear window defogger timer: Operating	OFF
Interior lamp: While dimming	Goes out.
Step lamp: Illuminating	Flashes.



SEL511S

5. Touch "LAN".



SEL512S

6. Perform each diagnostic item according to the function chart as follows:

For further information, read the CONSULT Operation Manual.

Consult (Cont'd)

NOTICE: While diagnoses are being performed using CONSULT, control system input-output signal operations are as indicated in the following table.

Control system		Operation	Remarks
Power window control			
	Power window main switch	—	
	Power window lock switch	—	
	Power window sub-switch	X	Operates even when ignition switch is "OFF".
	"AUTO" operation (Driver's seat)	—	
Power door lock control		—	
Automatic drive positioner control			
	Auto operation	—	
	Cancel switch, Set switch, Memory switch (1, 2)	—	
	Manual operation	X	
Power seat (passenger's seat) control		X	Does not operate while "ACTIVE TEST" is being performed.
Time control system	Intermittent wiper control	—	
	Rear window defogger timer control	—	
	Ignition key warning control	—	
	Light warning control	—	
	Interior lamp control	—	
	Seat belt timer control	—	
	Door keyhole illumination control	—	
Theft warning control		—	
Step lamp control		—	
Illumination control		—	
Door mirror automatic tilt down reverse control		—	
Multi-remote control		—	

X: Operates
—: Does not operate

LAN COMMUNICATION CHECK

DIAGNOSTIC ITEM	FUNCTION	DIAGNOSTIC RESULTS DISPLAY	
LAN COMM DIAGNOSIS	Check whether or not communication between BCM and LCU's is in good order.	• "NO FAILURE" • "A-LINE", "B-LINE", "A-B-LINE" • "COMM FAIL" • "NO RESPONSE" • "SLEEP" • "PAST COMM FAIL" • "PAST NO RESPONSE"	
WAKE-UP DIAGNOSIS	Set the LAN system in "SLEEP" mode and check whether or not the LAN system is shifted to "WAKE-UP" mode on a particular LCU when the corresponding LCU switch is operated.	OK	"NO FAILURE"
		NG	Malfunction LCU name is displayed.

GI
MA
EM
LC
EF &
EC
FE
AT
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

Consult (Cont'd)

DIAGNOSTIC SYSTEM APPLICATION

CONTROL SYSTEM		MODE		
		SELF-DIAGNOSTIC RESULTS	DATA MONITOR	ACTIVE TEST
Power window control			X	X
Power door lock control		X	X	X
Automatic drive positioner control		X	X	X
Power seat control			X	X
Time control system	Intermittent wiper control		X	X
	Rear window defogger timer control		X	X
	Ignition key warning control		X	X
	Light warning control		X	X
	Interior lamp control		X	X
	Seat belt timer control		X	X
	Door keyhole illumination control		X	X
Theft warning control			X	X
Step lamp control			X	X
Illumination control			X	X
Door mirror automatic tilt down reverse control*			X	X
Multi-remote control			X	X

X: Applicable

*: The diagnosis for this control is included in "Automatic drive positioner control" on CONSULT.

For diagnostic item in each control system, read the CONSULT Operation Manual.

FUNCTION

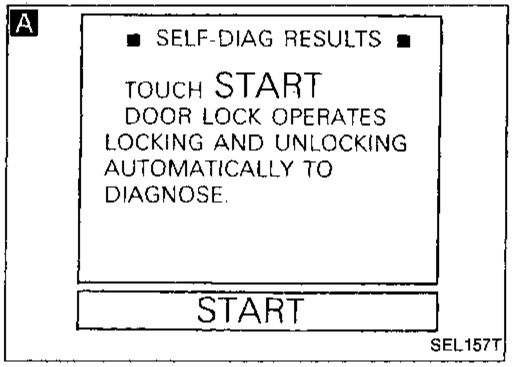
Diagnostic mode	Function
Self-diagnostic results	Self-diagnostic results can be read and erased quickly.
Data monitor	Input/Output data in the BCM can be read.
Active test	Mode in which CONSULT drives some actuators apart from the control units.
BCM part numbers	BCM part numbers can be read.

Consult — Self-diagnostic Results

POWER DOOR LOCK

Diagnostic procedure

A

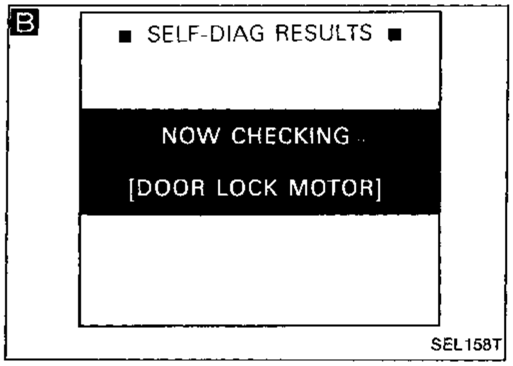


■ SELF-DIAG RESULTS ■

TOUCH START
DOOR LOCK OPERATES
LOCKING AND UNLOCKING
AUTOMATICALLY TO
DIAGNOSE.

1) Choose "**DOOR LOCK**" in SELECT TEST ITEM.
2) Touch "**SELF-DIAG RESULTS**" of SELECT DIAG mode.
3) Touch "**START**".

B

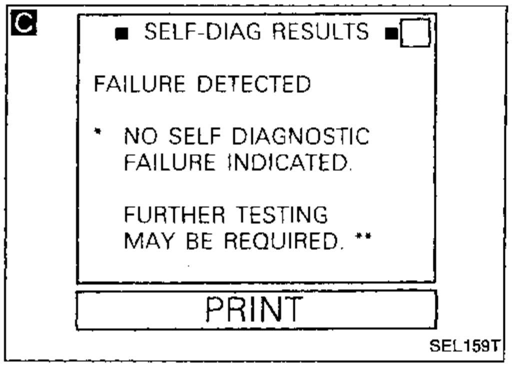


■ SELF-DIAG RESULTS ■

NOW CHECKING ..
[DOOR LOCK MOTOR]

Start self-diagnosis on all door motors. Lock and unlock all doors by operating door motors automatically.

C **D**

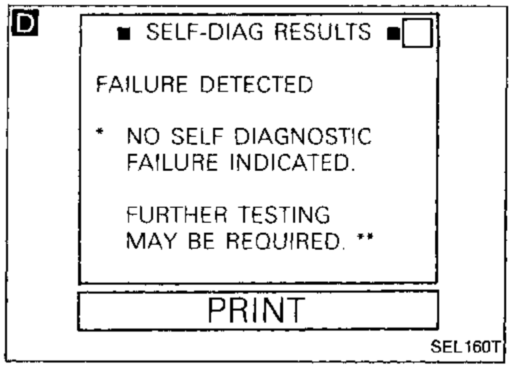


■ SELF-DIAG RESULTS ■

FAILURE DETECTED

* NO SELF DIAGNOSTIC
FAILURE INDICATED.

FURTHER TESTING
MAY BE REQUIRED. **



■ SELF-DIAG RESULTS ■

FAILURE DETECTED

* NO SELF DIAGNOSTIC
FAILURE INDICATED.

FURTHER TESTING
MAY BE REQUIRED. **

Diagnostic contents are as shown in the figure at left.
C : When no malfunction is detected
D : When malfunction is detected
A summary of diagnostic results is given in the following chart.

Consult — Self-diagnostic Results (Cont'd)

POWER DOOR LOCK RESULT LIST

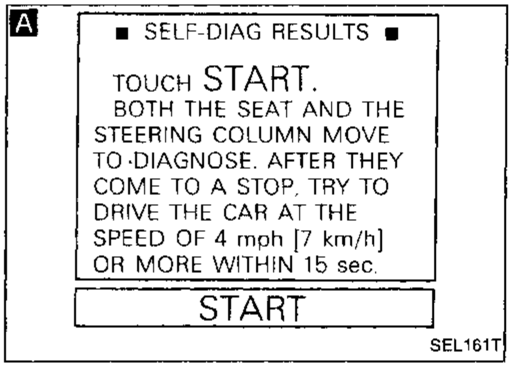
Diagnostic item	Explanation	Repair order
*NO SELF DIAGNOSTIC FAILURE INDICATED/FURTHER TESTING MAY BE REQUIRED.**	Normal The door lock system is in good order.	—
DOOR LOCK MOTOR-DR	The circuit for the driver side door lock motor is malfunctioning.	1. Visually check the wiring harness connections. 2. Diagnose the door lock motor circuit referring to the **DIAGNOSTIC PROCEDURE 4, 5** of **POWER DOOR LOCK — LAN (EL-116).**
DOOR LOCK MOTOR-AS	The circuit for the passenger side door lock motor is malfunctioning.	
DOOR LOCK MOTOR-RR/RH	The circuit for the rear RH side door lock motor is malfunctioning.	
DOOR LOCK MOTOR-RR/LH	The circuit for the rear LH side door lock motor is malfunctioning.	

Consult — Self-diagnostic Results (Cont'd)

AUTOMATIC DRIVE POSITIONER (ADP)

Diagnostic procedure

A

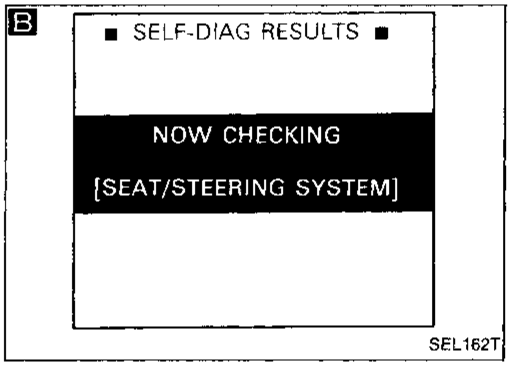

■ SELF-DIAG RESULTS ■

TOUCH START.
BOTH THE SEAT AND THE STEERING COLUMN MOVE TO DIAGNOSE. AFTER THEY COME TO A STOP, TRY TO DRIVE THE CAR AT THE SPEED OF 4 mph [7 km/h] OR MORE WITHIN 15 sec.

SEL161T

1) Choose "**AUTO DRIVE POSITIONER**" in SELECT TEST ITEM.
2) Touch "**SELF-DIAG RESULTS**" of SELECT DIAG MODE.
3) Touch "**START**".

B


■ SELF-DIAG RESULTS ■

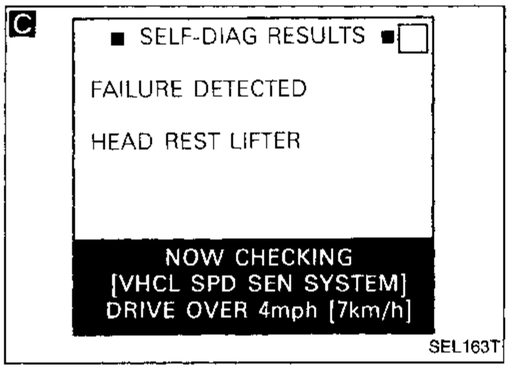
NOW CHECKING

[SEAT/STEERING SYSTEM]

SEL162T

Seats, steering wheel and door mirrors automatically move, and self-diagnosis on these parts will start.

C


■ SELF-DIAG RESULTS ■☐

FAILURE DETECTED

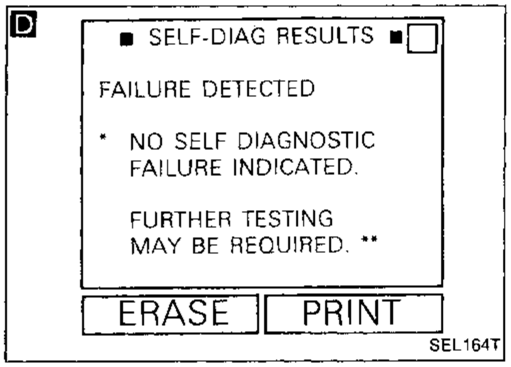
HEAD REST LIFTER

NOW CHECKING
[VHCL SPD SEN SYSTEM]
DRIVE OVER 4mph [7km/h]

SEL163T

After completing self-diagnosis, diagnostic contents appear on the display as shown at left. Within 15 seconds after completing self-diagnosis, drive vehicle at speeds greater than 7 km/h (4 MPH) and start self-diagnosis on the vehicle speed sensor.

D **E**

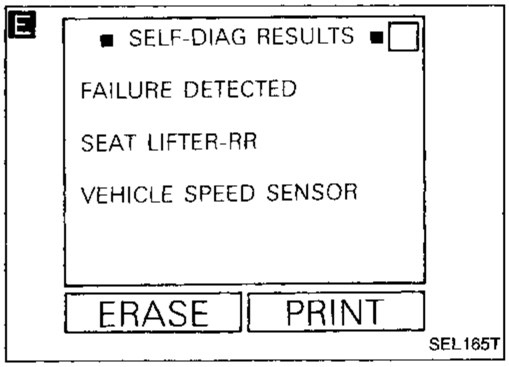

■ SELF-DIAG RESULTS ■☐

FAILURE DETECTED

* NO SELF DIAGNOSTIC FAILURE INDICATED.

FURTHER TESTING MAY BE REQUIRED. **

SEL164T


■ SELF-DIAG RESULTS ■☐

FAILURE DETECTED

SEAT LIFTER-RR

VEHICLE SPEED SENSOR

SEL165T

After completing self-diagnosis, diagnostic contents appear on the display as shown at left.
D : When no malfunction is detected
E : When malfunction is detected
A summary of self-diagnostic results is given in the following charts.

Consult — Self-diagnostic Results (Cont'd)

AUTOMATIC DRIVE POSITIONER RESULT LIST — Self-diagnosis on seats, steering wheel and door mirrors

Diagnostic item	Explanation	Repair order
*NO SELF DIAGNOSTIC FAILURE INDICATED/FURTHER TESTING MAY BE REQUIRED.**	Normal The automatic drive positioner system is in good order.	—
SEAT SLIDE	Condition: While the seat slide is moving backward for 2.5 seconds, then forward for 2.5 seconds. If the number of seat slide sensor pulses changes 2 times or less, the seat slide is determined to be malfunctioning.	Diagnose the seat slide device referring to the **DIAGNOSTIC PROCEDURE 6-1** of **AUTOMATIC DRIVE POSITIONER — LAN (EL-148).**
SEAT RECLINING	Condition: While the seat is reclining forward for 2.5 seconds, then backward for 2.5 seconds. If the number of seat reclining sensor pulses changes 2 times or less, the seat reclining device is determined to be malfunctioning.	Diagnose the seat reclining device referring to the **DIAGNOSTIC PROCEDURE 6-2** of **AUTOMATIC DRIVE POSITIONER — LAN (EL-149).**
SEAT LIFTER-FR	Condition: While the lifter's front section is moving down for 2.5 seconds, then up for 2.5 seconds. If the number of sensor pulses (located in the front section of the seat lifter) changes 2 times or less, the front seat lifter is determined to be malfunctioning.	Diagnose the seat front lifter device referring to the **DIAGNOSTIC PROCEDURE 6-3** of **AUTOMATIC DRIVE POSITIONER — LAN (EL-150).**
SEAT LIFTER-RR	Condition: While the lifter's rear section is moving down for 2.5 seconds, then up for 2.5 seconds. If the number of sensor pulses (located in the rear section of the seat lifter) changes 2 times or less, the rear seat lifter is determined to be malfunctioning.	Diagnose the seat rear lifter device referring to the **DIAGNOSTIC PROCEDURE 6-4** of **AUTOMATIC DRIVE POSITIONER — LAN (EL-151).**

Consult — Self-diagnostic Results (Cont'd)

Diagnostic item	Explanation	Repair order
HEAD REST LIFTER	Condition: While the head rest is moving down for 2.5 seconds, then up for 2.5 seconds. If the number of head rest sensor pulses changes 2 times or less, the head rest lifter is determined to be malfunctioning.	Diagnose the headrest device referring to the **DIAGNOSTIC PROCEDURE 6-5** of **AUTOMATIC DRIVE POSITIONER — LAN (EL-152).**
STEERING TELESCO	Condition: While steering telesco is moving forward for 1 second, then backward for 1 second. If telesco sensor output changes 0.2 volts or less, the steering telesco section is determined to be malfunctioning.	Diagnose the steering telescopic motor and sensor referring to the **DIAGNOSTIC PROCEDURE 3** of **AUTOMATIC DRIVE POSITIONER — LAN (EL-142).**
STEERING TILT	Condition: While the steering wheel is tilting up for 1 second, then down for 1 second. If tilt sensor output changes 0.2 volts or less, the steering tilt device is determined to be malfunctioning.	Diagnose the steering tilt motor and sensor referring to the **DIAGNOSTIC PROCEDURE 3** of **AUTOMATIC DRIVE POSITIONER — LAN (EL-142).**
MIRROR-LH or RH UP-DOWN or R-L	If the oscillation signal from each sensor is 1.25 kHz or more when the door mirror is moved for 2.5 seconds in the lower right direction, the door mirror is functioning properly. If it is less than 1.25 kHz, move the door mirror in the upper left direction for 2.5 seconds and recheck. If the oscillation signal from each sensor is less than 1.25 kHz, the door mirror is determined to be malfunctioning.	Diagnose the LH or RH door mirror actuator referring to the **DIAGNOSTIC PROCEDURE 7** of **AUTOMATIC DRIVE POSITIONER — LAN (EL-153).**
VEHICLE SPEED SENSOR	If the vehicle speed sensor output of less than 7 km/h (4 MPH) is detected within 15 seconds after completing self-diagnosis on the seat, steering system and door mirrors, the vehicle speed sensor is determined to be malfunctioning.	Diagnose the vehicle speed sensor circuit referring to the **DIAGNOSTIC PROCEDURE 2 (EL-139)** of **AUTOMATIC DRIVE POSITIONER — LAN.**

Consult — Self-diagnostic Results (Cont'd)

AUTOMATIC DRIVE POSITIONER RESULT LIST — PAST Malfunction (Past malfunctions are shown on the display unless they are repaired and the data stored in BCM is cleared using CONSULT.)

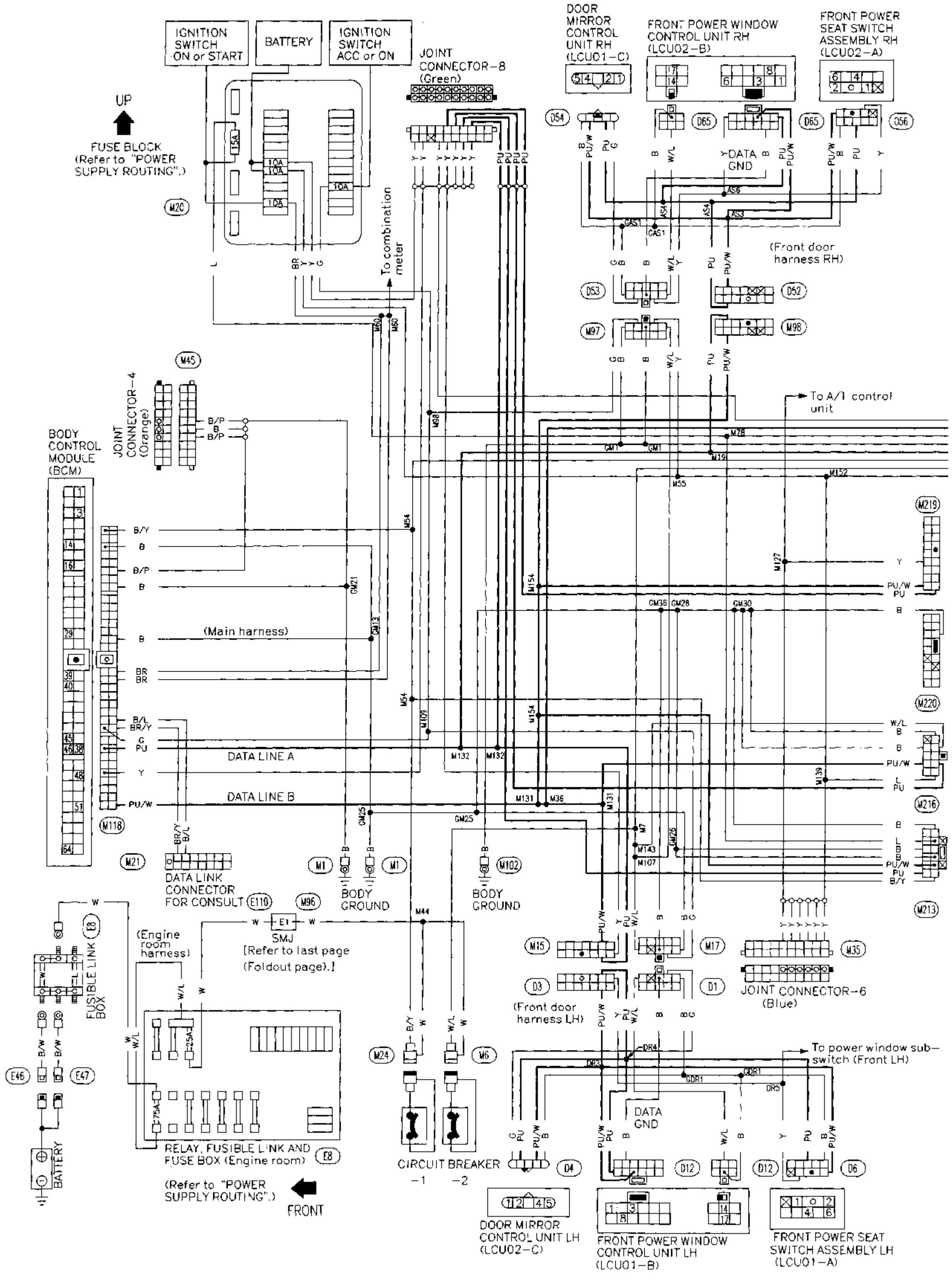
Diagnostic item	Explanation	Repair order (If malfunctioning)
SEAT SLIDE [PAST INPUT FAIL]	If the "ON" signal (input) from the seat slide manual switch continues for at least 10 seconds while vehicle is being driven at speeds greater than 7 km/h (4 MPH), the seat slide input system is determined to be malfunctioning.	Diagnose the seat slide switch referring to the **DIAGNOSTIC PROCEDURE 5** of **AUTOMATIC DRIVE POSITIONER — LAN (EL-147).**
SEAT RECLINING [PAST INPUT FAIL]	If the "ON" signal (input) from the seat reclining manual switch continues for at least 10 seconds while vehicle is being driven at speeds greater than 7 km/h (4 MPH), the seat reclining input system is determined to be malfunctioning.	Diagnose the seat reclining switch referring to the **DIAGNOSTIC PROCEDURE 5** of **AUTOMATIC DRIVE POSITIONER — LAN (EL-149).**
STEERING TILT [PAST INPUT FAIL]	If the "ON" signal (input) from the steering tilt manual switch continues for at least 10 seconds whether or not vehicle is driven, the steering tilt input system is determined to be malfunctioning.	Diagnose the steering tilt switch referring to the **DIAGNOSTIC PROCEDURE 3** of **AUTOMATIC DRIVE POSITIONER — LAN (EL-142).**
DETENT SW [PAST INPUT FAIL]	If a vehicle speed of greater than 7 km/h (4 MPH) is detected while the AT select lever is set to "P" (the detent switch "0" volts), the detent switch input system is determined to be malfunctioning.	Diagnose the detention switch referring to the **DIAGNOSTIC PROCEDURE 1** of **AUTOMATIC DRIVE POSITIONER — LAN (EL-138).**

Consult — Self-diagnostic Results (Cont'd)

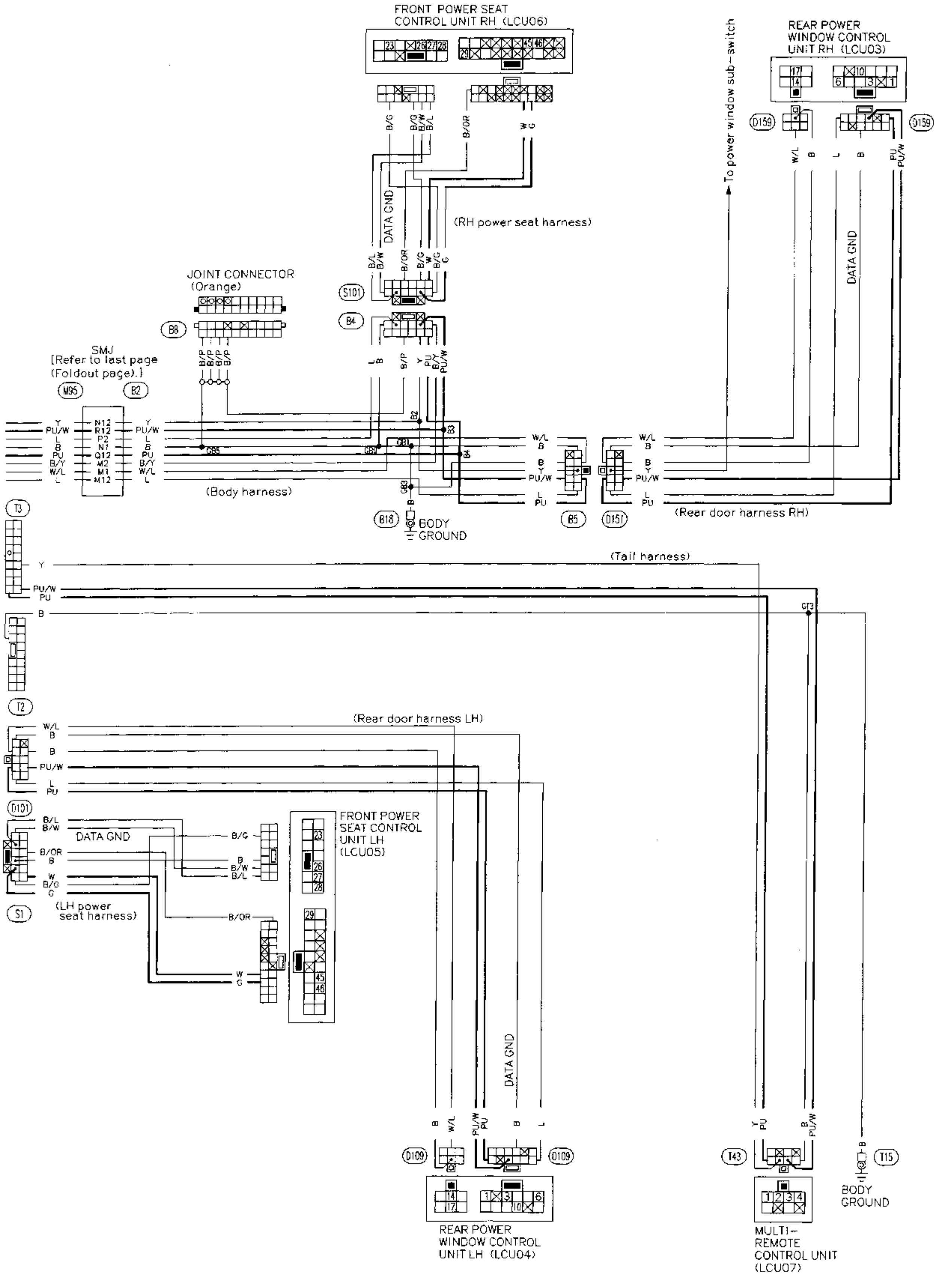
Diagnostic item	Explanation	Repair order (If malfunctioning)
SEAT SLIDE [PAST OUTPUT FAIL]	During the time the vehicle is being driven at speeds greater than 7 km/h (4 MPH), if the seat slides greater than 6 mm (0.24 in) within 2.5 seconds after the seat slide sensor receives an input signal (when neither manual input nor ADP output signal is produced), the seat slide output system is determined to be malfunctioning.	Diagnose the seat slide device referring to the **DIAGNOSTIC PROCEDURE 6-1** of **AUTOMATIC DRIVE POSITIONER — LAN (EL-148).**
SEAT RECLINING [PAST OUTPUT FAIL]	During the time the vehicle is being driven at speeds greater than 7 km/h (4 MPH), if the seat reclines greater than 1° within 2.5 seconds after the seat reclining sensor receives an input signal (when neither manual input nor ADP output signal is produced), the seat reclining output system is determined to be malfunctioning.	Diagnose the seat reclining device referring to the **DIAGNOSTIC PROCEDURE 6-2** of **AUTOMATIC DRIVE POSITIONER — LAN (EL-149).**
STEERING TILT [PAST OUTPUT FAIL]	During the time the vehicle is being driven at speeds greater than 7 km/h (4 MPH), if the steering wheel tilts greater than 1° within 2.5 seconds after the steering tilt sensor receives an input signal (when neither manual input signal nor ADP output signal is produced), the steering tilt output system is determined to be malfunctioning.	Diagnose the steering tilt motor and sensor referring to the **DIAGNOSTIC PROCEDURE 3** of **AUTOMATIC DRIVE POSITIONER — LAN (EL-142).**
TELESCO SEN [PAST]	If a voltage greater than 4.9 volts (in relation to the sensor power source of 5 volts) or less than 0.1 volts is detected across the telesco sensor, the telesco sensor system is determined to be malfunctioning.	Diagnose the steering telescopic motor and sensor referring to the **DIAGNOSTIC PROCEDURE 3** of **AUTOMATIC DRIVE POSITIONER — LAN (EL-142).**
TILT SEN [PAST]	If a voltage greater than 4.9 volts (in relation to the sensor power source of 5 volts) or less than 0.1 volts is detected across the steering tilt sensor, the tilt sensor system is determined to be malfunctioning.	Diagnose the steering tilt motor and sensor referring to the **DIAGNOSTIC PROCEDURE 3** of **AUTOMATIC DRIVE POSITIONER — LAN (EL-142).**

LAN Communication Check

WIRING DIAGRAM — MAIN POWER SUPPLY AND GROUND CIRCUIT



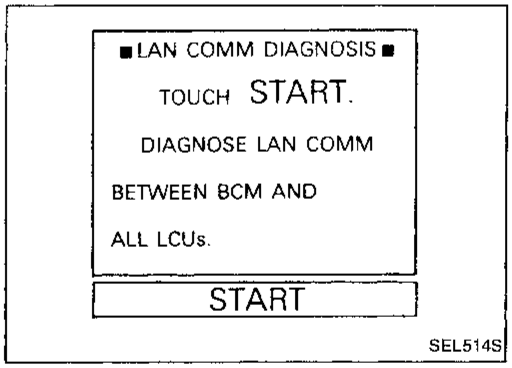
LAN Communication Check (Cont'd)



MEL736D

LAN Communication Check (Cont'd)

LAN COMMUNICATION DIAGNOSIS


■LAN COMM DIAGNOSIS■

TOUCH START.

DIAGNOSE LAN COMM

BETWEEN BCM AND

ALL LCUs.

START

SEL514S

INSPECTION START

↓

PERFORM LAN COMMUNICATION DIAGNOSIS.

1. Turn ignition switch "ON".
2. Perform "LAN COMM DIAGNOSIS" in "LAN-COMM CHECK".

OR

- Perform "On-board Diagnosis — Mode I (LAN communication diagnosis)". (Refer to EL-79)

OK → INSPECTION END

↓ NG

According to the following table, repair the circuit.

↓

ERASE DIAGNOSTIC RESULTS MEMORY

1. Turn ignition switch "ON".
2. Perform "LAN COMM DIAGNOSIS" in "LAN-COMM CHECK".
3. Erase diagnostic results memory. (Touch "ERASE".)

↓

INSPECTION END

DIAGNOSTIC PROCEDURE

Diagnostic results	LCU No.											Number of malfunctioning LCUs	Cause	Service procedure
	1-A	1-B	1-C	2-A	2-B	2-C	3	4	5	6	7			
COMMUNICATION FAILURE		○							○	○		One	① Brief communication failure ② Open LCU's data ground line ③ Malfunctioning LCU's communication IC	① Perform LAN communication diagnosis several times. ② Check for continuity in LCU's data ground circuit. (Refer to Example 1 and Wiring Diagram) (EL-100) ③ Replace LCU.*
	○			○	○	○	○	○			○	One	① Brief communication failure ② Malfunctioning LCU's communication IC	① Perform LAN communication diagnosis several times. ② Replace LCU.*
	All LCUs											All	① Brief communication failure ② Malfunctioning BCM's communication IC	① Perform LAN communication diagnosis several times. ② Replace BCM.*
Data line A: NO RESPONSE			○			○						One	① Open LCU's data ground line ② Poor connection in data line A of the LCU connector or junction connector ③ Open data line A between LCU and junction connector ④ Malfunctioning data line A circuit in LCU	① Check for continuity in LCU's data ground circuit. (Refer to Example 1 and Wiring Diagram (EL-100)) ② Check for loose connector. ③ Check for continuity in data line A between LCU and junction connector. (Refer to Example 2 and Wiring Diagram (EL-100)) ④ Replace LCU.*
	○	○		○	○		○	○	○	○	○	One	① Poor connection in data line A of the LCU connector or junction connector ② Open data line A between LCU and junction connector ③ Malfunctioning data line A circuit in LCU	① Check for loose connector. ② Check for continuity in data line A between LCU and junction connector. (Refer to Example 2 and Wiring Diagram (EL-100)) ③ Replace LCU.*
	○	○	○	○	○	○	○	○	○	○	○	Two or more	① Open data line A	① Refer to wiring diagram (EL-100) and check for continuity in data line A of malfunctioning LCU located closest to BCM. (Refer to Example 3)
	All LCUs											All	① Poor connection in data line A at BCM connector ② Open data line A at BCM ③ Data line A shorted to ground ④ Malfunctioning data line A circuit in BCM	① Check for loose BCM connector. ② Check for continuity in data line A at BCM. (Refer to Example 3 and Wiring Diagram (EL-100)) ③ Check for continuity between data line A and ground. (Refer to Example 4 and Wiring Diagram (EL-100)) ④ Replace BCM.*

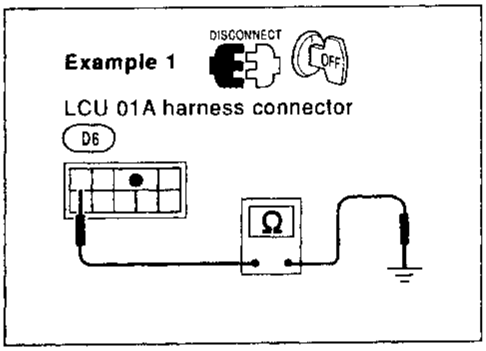
*: BCM or LCU may be the cause of a problem, but this is rarely the case.

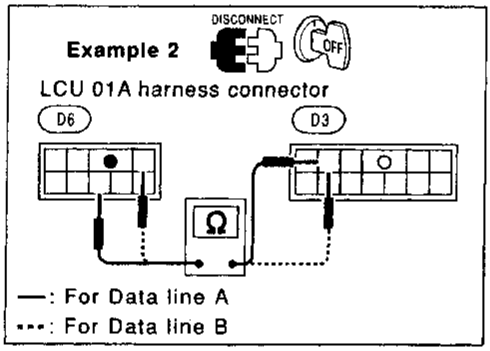
LAN Communication Check (Cont'd)

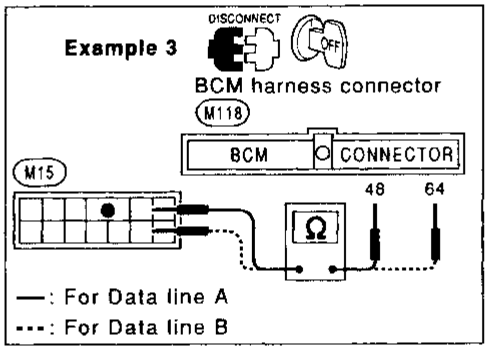
Diagnostic results	LCU No.											Number of malfunctioning LCUs	Cause	Service procedure
	1-A	1-B	1-C	2-A	2-B	2-C	3	4	5	6	7			
Data line B: NO RESPONSE	○	○	○	○	○	○	○	○	○	○	○	One	① Poor connection in data line B of the LCU connector or junction connector ② Open data line B between LCU and harness connector. ③ Malfunctioning data line B circuit in LCU	① Check for loose connector. ② Check for continuity in data line B between LCU and junction connector. (Refer to Example 2 and Wiring Diagram (EL-100)) ③ Replace LCU.*
	○	○	○	○	○	○	○	○	○	○	○	Two or more	① Open data line B	① Refer to wiring diagram (EL-92) and check for continuity in data line B of malfunctioning LCU located closest to BCM. (Refer to Example 3)
	All LCUs											All	① Poor connection of data line B at BCM connector ② Open data line B at BCM ③ Data line B shorted to ground ④ Malfunctioning data line B circuit in BCM	① Check for loose BCM connector. ② Check for continuity in data line B at BCM. (Refer to Example 3 and Wiring Diagram (EL-100)) ③ Check for continuity between data line B and ground. (Refer to Example 4 and Wiring Diagram (EL-100)) ④ Replace BCM.*
Data line A, B: NO RESPONSE	○	○	○	○	○	○	○	○	○	○	○	One	① Blown LCU fuse, fusible link, or faulty circuit breaker ② Open power supply harness ③ Disconnected harness connector or poor connector connection ④ Open data lines A and B between LCU and junction connector ⑤ LCU communication circuit failure	① Check LCU fuse, fusible link and circuit breaker. ② Check input to LCU's power supply. (Refer to Example 5 and Wiring Diagram (EL-100)) ③ Check for loose connector. ④ Check for continuity of data lines A and B between LCU and junction connector. (Refer to Example 2 and Wiring Diagram (EL-100)) ⑤ Replace LCU.*
	○	○	○	○	○	○	○	○	○	○	○	Two or more	① Blown LCU fuse, fusible link or faulty circuit breaker ② Open power supply harness ③ Disconnected harness connector or poor connector connection ④ Open data lines A and B	① Check LCU fuse, fusible link and circuit breaker. ② Check input to LCU's power supply. (Refer to Example 5 and Wiring Diagram (EL-100)) ③ Check for loose connector at BCM. ④ Check for continuity between data lines A and B. (Refer to Example 3 and Wiring Diagram (EL-100))
	All LCUs											All	① Poor connection of data lines A and B at BCM connector ② Open data lines A and B at BCM ③ Short circuit between data lines A and B ④ Data lines A and B shorted to ground ⑤ Malfunctioning communication circuit in BCM	① Check for loose BCM connector. ② Check for continuity between data lines A and B at BCM. (Refer to Example 3 and Wiring Diagram (EL-100)) ③ Check for continuity between data lines A and B. (Refer to Example 6 and Wiring Diagram (EL-100)) ④ Check for continuity between data line A and ground, and data line B and ground. (Refer to Example 4 and Wiring Diagram (EL-100)) ⑤ Replace BCM.*

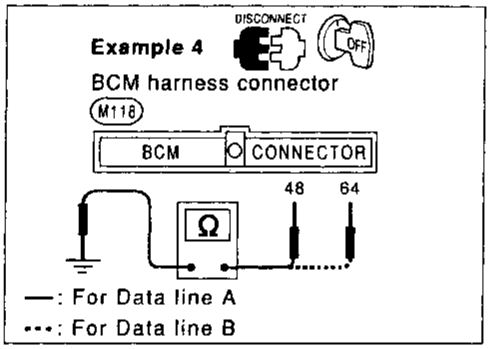
*: BCM or LCU may be the cause of a problem, but this is rarely the case.

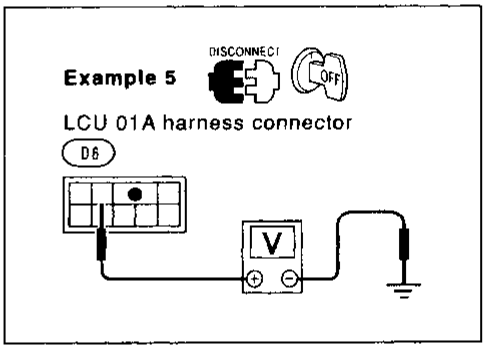
LAN Communication Check (Cont'd)

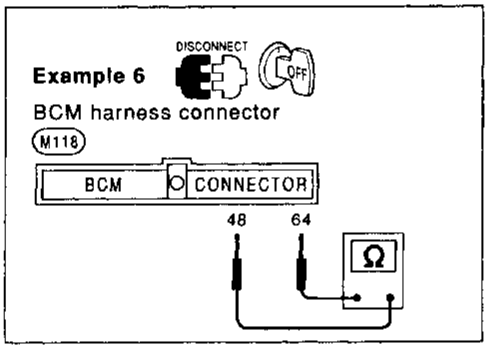








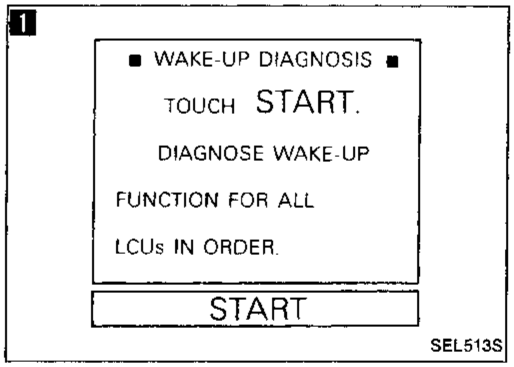




SEL518S

LAN Communication Check (Cont'd)

WAKE-UP DIAGNOSIS

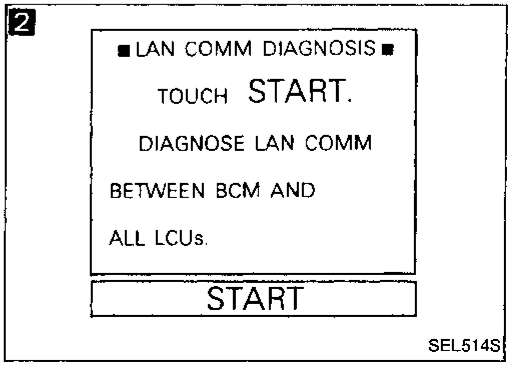


1

■ WAKE-UP DIAGNOSIS ■

TOUCH START.

DIAGNOSE WAKE-UP FUNCTION FOR ALL LCUs IN ORDER.

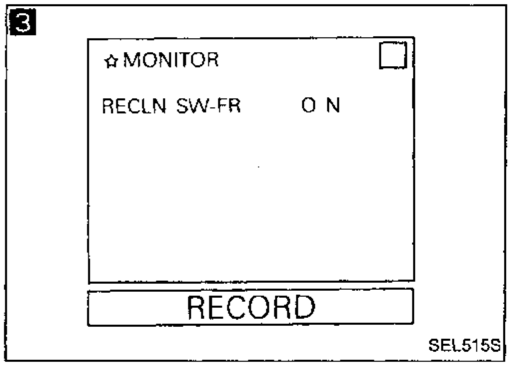


2

■ LAN COMM DIAGNOSIS ■

TOUCH START.

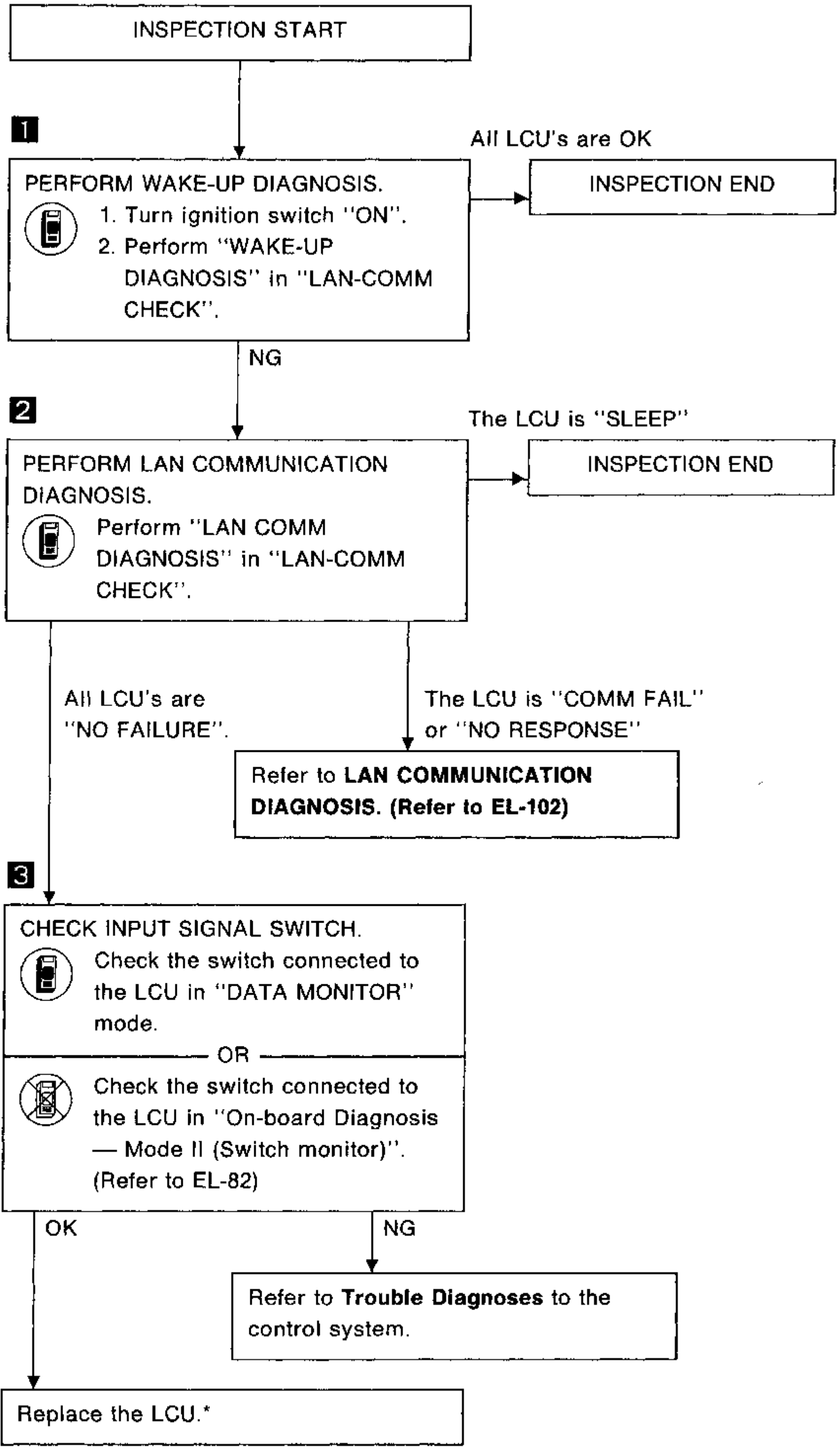
DIAGNOSE LAN COMM BETWEEN BCM AND ALL LCUs.



3

☆ MONITOR ☐

RECLN SW-FR ON



INSPECTION START

1 PERFORM WAKE-UP DIAGNOSIS.

1. Turn ignition switch "ON".
2. Perform "WAKE-UP DIAGNOSIS" in "LAN-COMM CHECK".

All LCU's are OK → INSPECTION END

NG ↓

2 PERFORM LAN COMMUNICATION DIAGNOSIS.

Perform "LAN COMM DIAGNOSIS" in "LAN-COMM CHECK".

The LCU is "SLEEP" → INSPECTION END

The LCU is "COMM FAIL" or "NO RESPONSE" → Refer to **LAN COMMUNICATION DIAGNOSIS. (Refer to EL-102)**

All LCU's are "NO FAILURE". ↓

3 CHECK INPUT SIGNAL SWITCH.

Check the switch connected to the LCU in "DATA MONITOR" mode.

— OR —

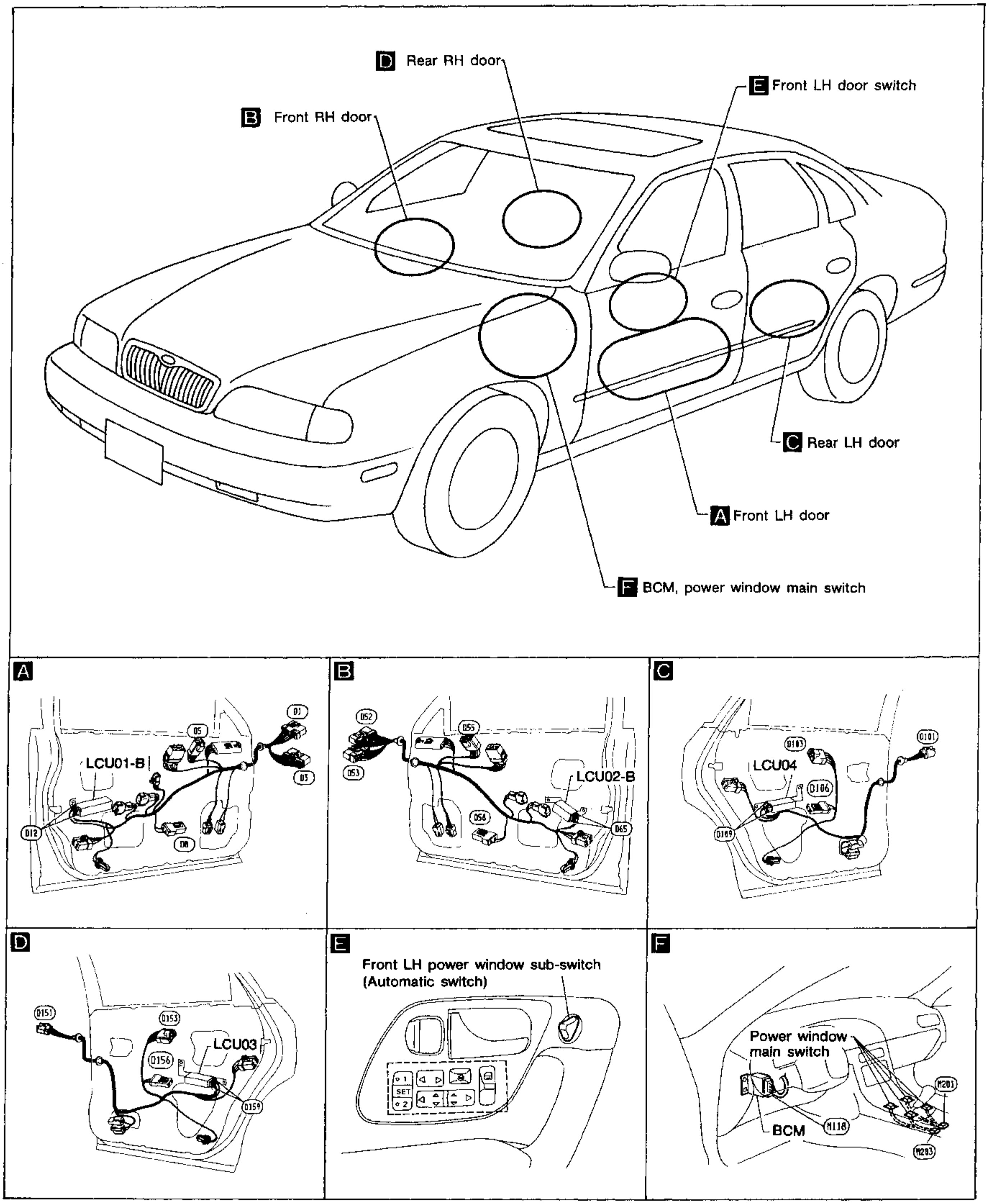
Check the switch connected to the LCU in "On-board Diagnosis — Mode II (Switch monitor)". (Refer to EL-82)

NG → Refer to **Trouble Diagnoses** to the control system.

OK → Replace the LCU.*

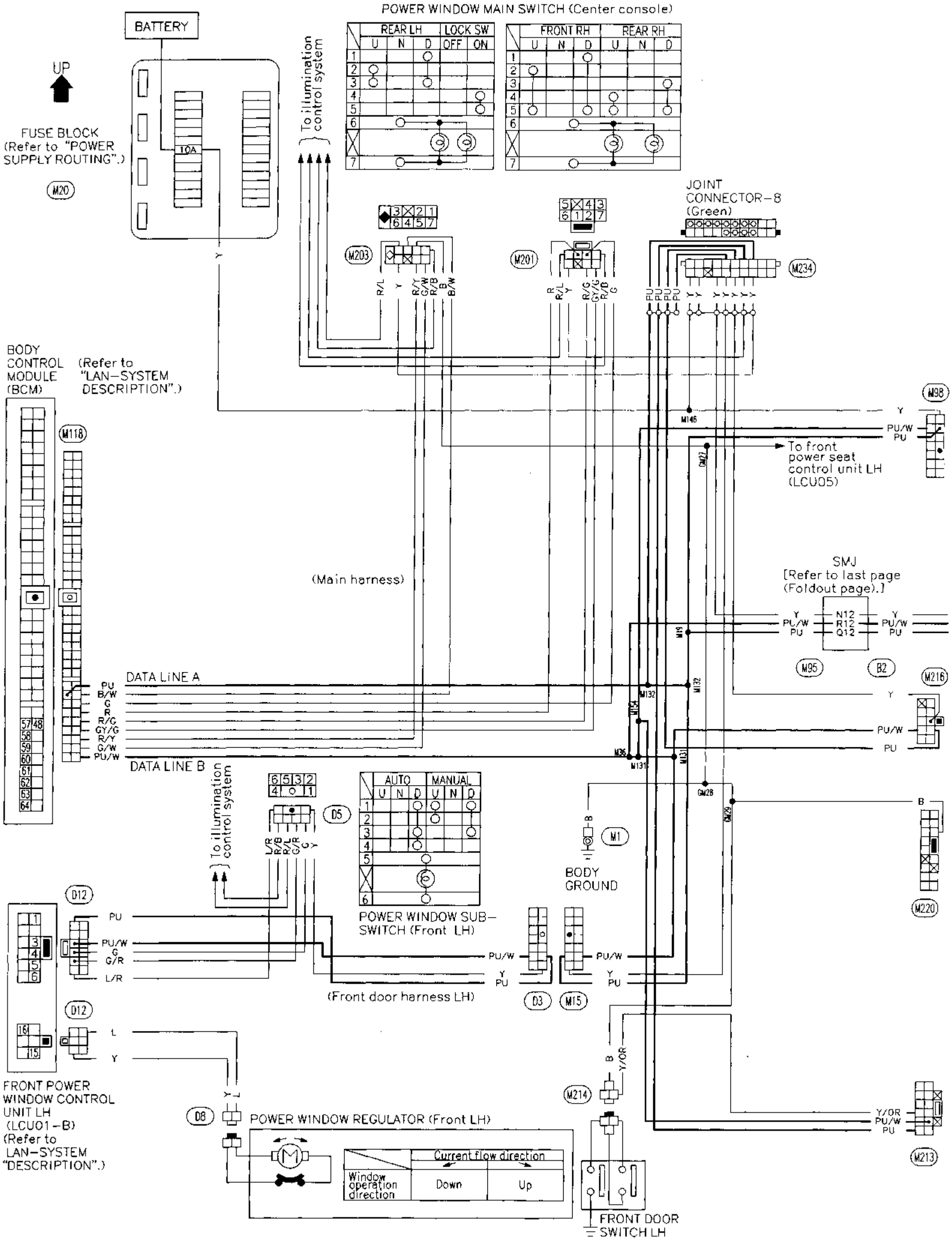
*: LCU may be the cause of a problem, but this is rarely the case.

Component Parts and Harness Connector Location

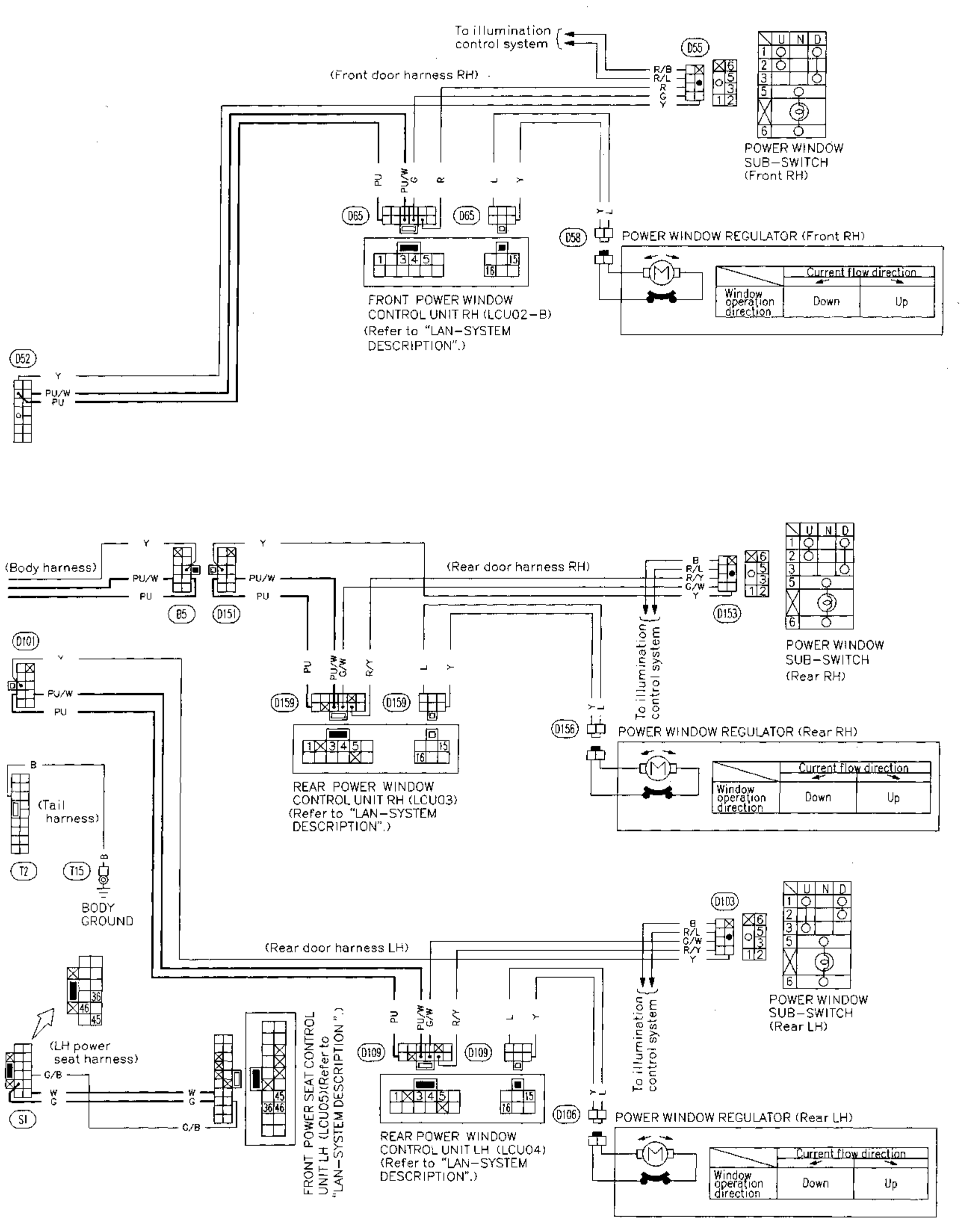


SEL472SA

Wiring Diagram

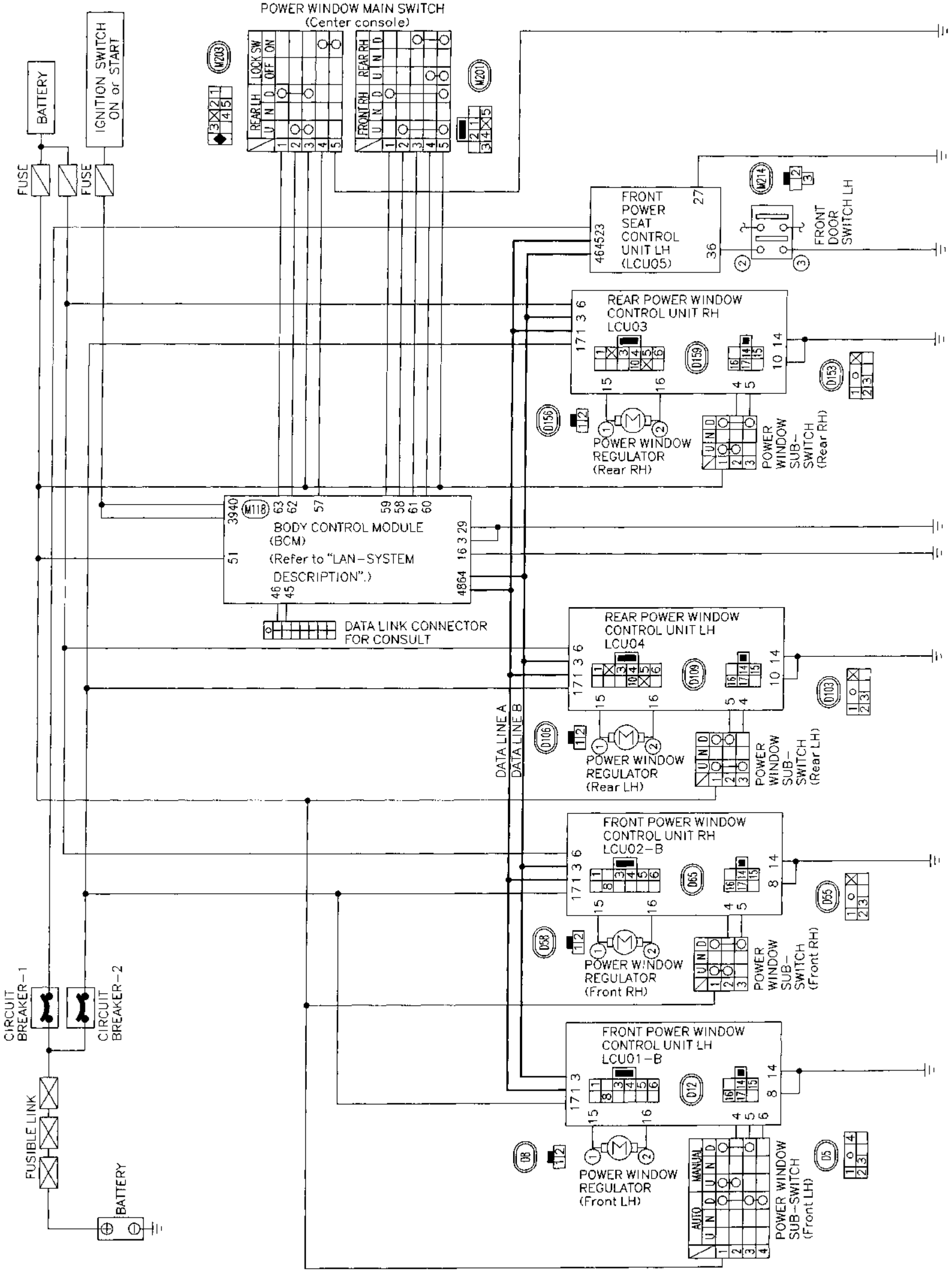


Wiring Diagram (Cont'd)



MEL737D

Schematic



MEL811D

Trouble Diagnoses

OPERATIVE CONDITION

- Power windows can be raised or lowered with each sub-switch or the power window main switch located on the center console when ignition key is in the "ON" position and power window lock switch on the center console is unlocked.
- When power window lock switch is locked, all except front LH window cannot be raised or lowered.
- To fully open the side window, make sure that ignition key is in the "ON" position, then operate the automatic switch (Front LH sub-switch) as follows. Press down completely on the automatic switch and release it; it need not be held. The window will automatically open all the way. To stop the window, press then release the "UP" side of the switch.

TROUBLE SYMPTOM

Perform "LAN Communication Check" (refer to EL-100) before starting with the following items.

• Power window lock switch on center console does not lock or unlock windows. (All except front LH window malfunction.)	— DIAGNOSTIC PROCEDURE 1
• One or more of each sub-switch malfunctions.	— DIAGNOSTIC PROCEDURE 2
• Power window automatic switch in driver's compartment does not lower front LH window.	— DIAGNOSTIC PROCEDURE 3
• Power window main switch on center console does not operate front RH and rear windows. Each sub-switch operates its window properly.	— DIAGNOSTIC PROCEDURE 4
• Power window main switch on center console does not raise or lower the front RH window and/or rear windows. Each sub-switch operates its window properly.	— DIAGNOSTIC PROCEDURE 5

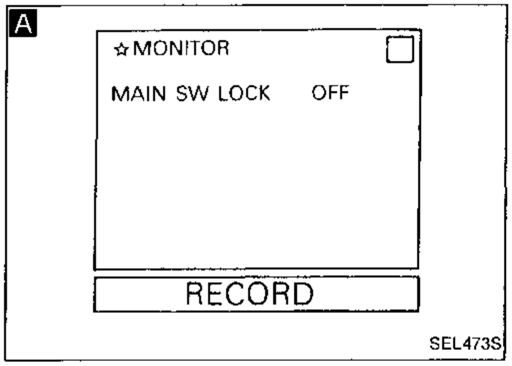
The following ABBREVIATIONS are used in this Trouble Diagnoses.

(FL): Front LH
(FR): Front RH
(RL): Rear LH
(RR): Rear RH

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

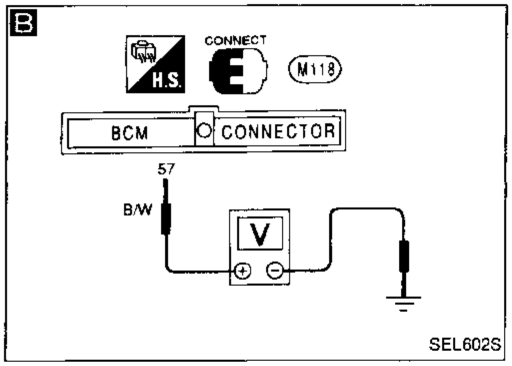
SYMPTOM: Power windows do not lock or unlock using window lock switch on center console.



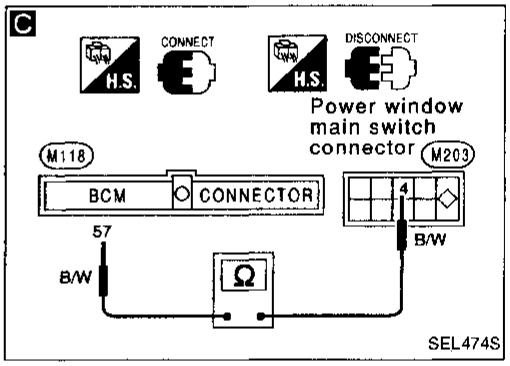
☆MONITOR ☐

MAIN SW LOCK OFF

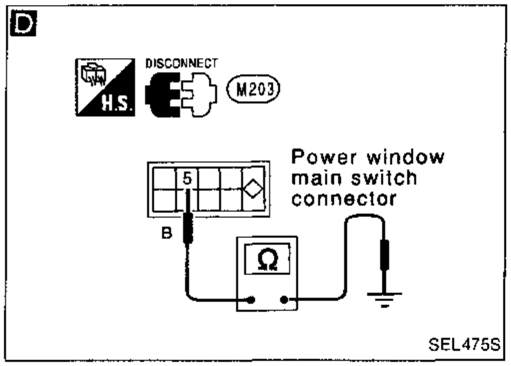
SEL473S



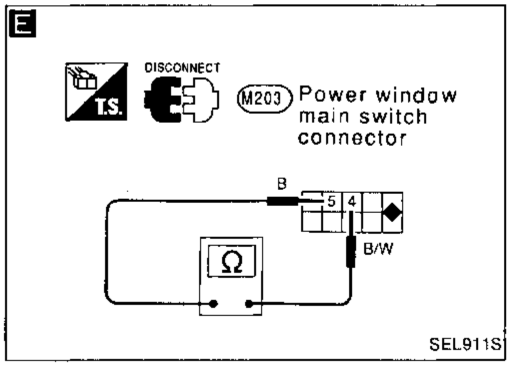
SEL602S



SEL474S



SEL475S



SEL911S

CHECK POWER WINDOW LOCK SWITCH CIRCUIT.

A CONSULT

See "MAIN SW LOCK" in DATA MONITOR mode.

"MAIN SW LOCK" should change from "OFF" to "ON" when pushing power window lock switch.

— OR —

B TESTER

Check voltage of power window lock signal while power window lock switch is "ON".

P/W lock switch operation	Voltage
OFF	About 5V
ON	0V

OK → Check LAN communication again.

NG ↓

C

1) Disconnect power window main switch connector.
2) Check continuity.

Terminals	Continuity
(57) - ④	Yes

NG → Repair harness.

OK ↓

D

Check continuity.

Terminals	Continuity
⑤ - GND	Yes

NG → Repair ground harness.

OK ↓

E

Check continuity with power window lock switch "ON".

Terminals	Continuity
⑤ - ④	Yes

OK → Check power window lock switch circuit and LAN communication again.

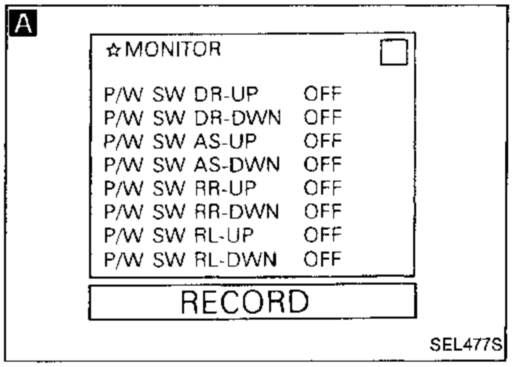
NG ↓

Replace power window main switch.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

SYMPTOM: One or more of the power window sub-switches do not operate.



☆MONITOR ☐

P/W SW DR-UP	OFF
P/W SW DR-DWN	OFF
P/W SW AS-UP	OFF
P/W SW AS-DWN	OFF
P/W SW RR-UP	OFF
P/W SW RR-DWN	OFF
P/W SW RL-UP	OFF
P/W SW RL-DWN	OFF

CHECK POWER WINDOW SUB-SWITCH CIRCUIT FOR TROUBLE PORTION.

A CONSULT

See "P/W SW UP or DWN" in DATA MONITOR mode.

"P/W SW UP or DWN" should change from "OFF" to "ON" when each sub-switch is turned ON.

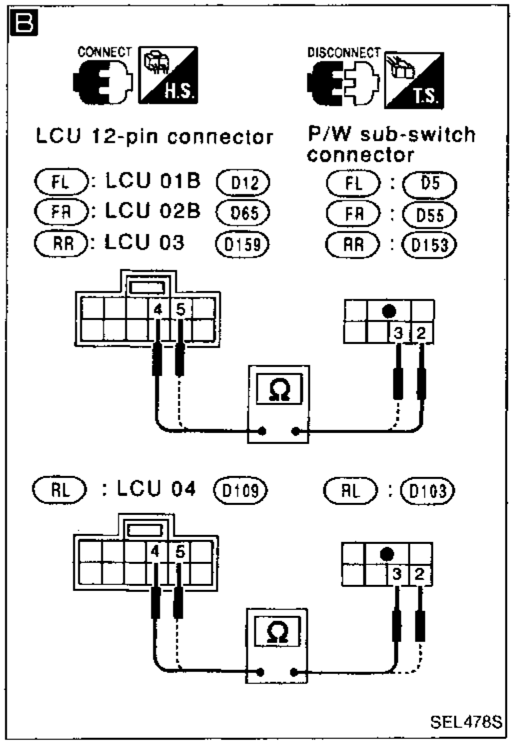
— OR —

ON-BOARD

Check power window sub-switch operation in Switch monitor (Mode II) mode. (Refer to On-board Diagnoses EL-82.)

OK → (Go to Ⓐ on next page.)

NG ↓



B

1) Disconnect P/W sub-switch connector.
2) Check continuity.

FL FR RR

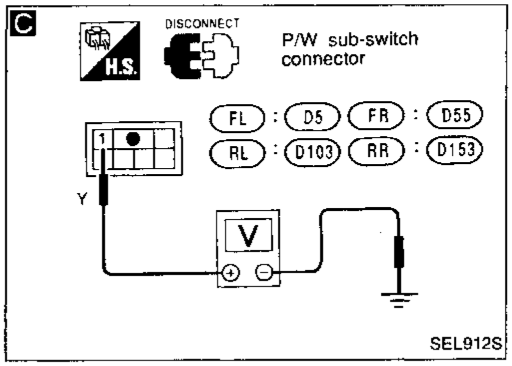
Terminals	Continuity
④ - ②	Yes
⑤ - ③	

RL

Terminals	Continuity
④ - ③	Yes
⑤ - ②	

NG → Repair harness.

OK ↓



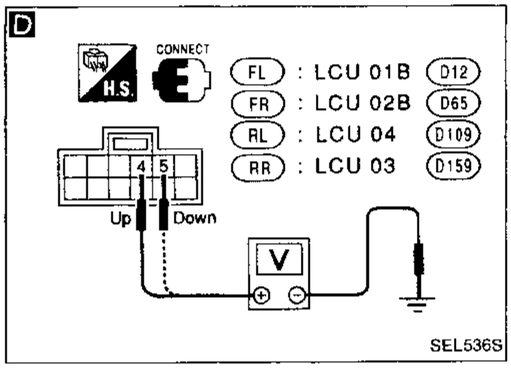
C

Check voltage for P/W sub-switch connector ① and ground.

Terminals	Voltage
① - GND	Battery voltage

NG → Repair battery harness circuit.

OK ↓



D

1) Connect P/W sub-switch connector.
2) Check battery voltage when P/W sub-switch is as follows:

Up	④ - Ground	Battery voltage
Down	⑤ - Ground	Battery voltage

NG → Replace P/W sub-switch.

OK ↓

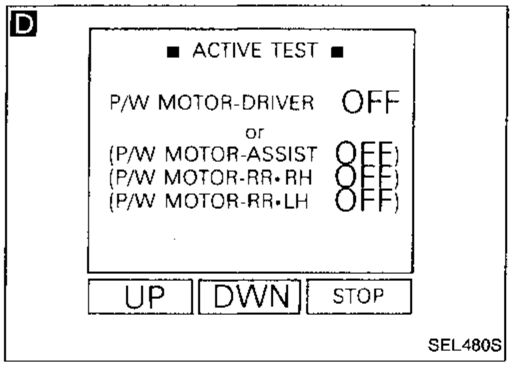
Check power window sub-switch circuit and LAN communication again.

Trouble Diagnoses (Cont'd)

Ⓐ

CHECK POWER WINDOW MOTOR CIRCUIT.

D CONSULT



■ ACTIVE TEST ■

P/W MOTOR-DRIVER OFF

or

(P/W MOTOR-ASSIST OFF)

(P/W MOTOR-RR•RH OFF)

(P/W MOTOR-RR•LH OFF)

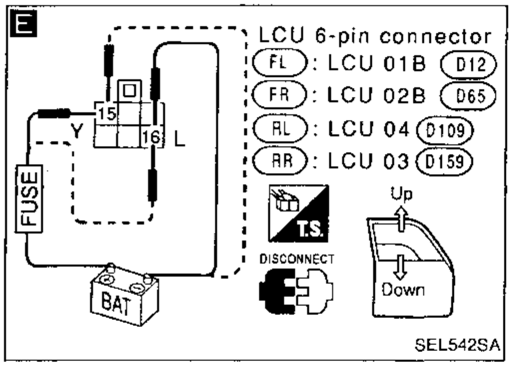
See "P/W MOTOR" in ACTIVE TEST mode.

Perform operation shown on display.

Power window motor should operate.

OR

E TESTER



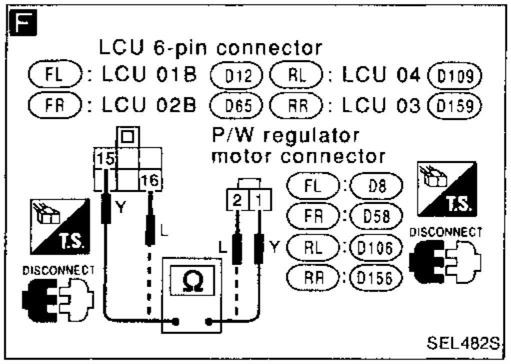
1) If motor does not operate, disconnect the corresponding LCU 6-pin connector.
2) Check power window motor operation.

Terminals		Operation
⊕	⊖	
⑮	⑯	Downward
⑯	⑮	Upward

OK → Check LAN communication again.

NG ↓

F



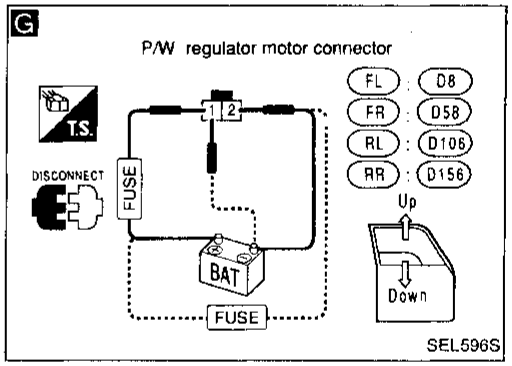
1) Disconnect LCU 6-pin connector and from P/W regulator motor connector.
2) Check continuity.

Terminals	Continuity
⑮ - ①	Yes
⑯ - ②	

NG → Repair harness.

OK ↓

G



Check P/W regulator motor circuit.

Terminals		Operation
⊕	⊖	
①	②	Downward
②	①	Upward

OK → Check LAN communication again.

NG ↓

Check P/W motor harness for open or short circuit.

NG → Repair harness.

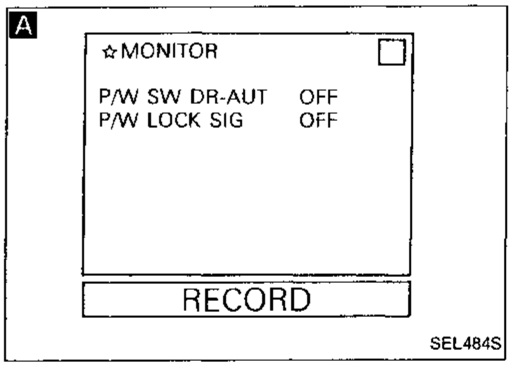
OK ↓

Replace P/W regulator motor.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

SYMPTOM: Power window automatic switch in driver's compartment does not operate.



☆MONITOR ☐

P/W SW DR-AUT	OFF
P/W LOCK SIG	OFF

RECORD

SEL484S

CHECK POWER WINDOW AUTOMATIC SWITCH CIRCUIT.

A CONSULT

See "P/W SW DR-AUT" in DATA MONITOR mode.

"P/W SW DR-AUT" should change from "OFF" to "ON" when pushing P/W automatic switch.

OR

ON-BOARD

Check P/W automatic switch operation in Switch monitor (Mode II) mode.
(Refer to On-board Diagnoses EL-82.)

OK → **A** CONSULT

Check "P/W LOCK SIG" in DATA MONITOR mode.

"P/W LOCK SIG" should change from "OFF" to "ON" when driver's P/W is operated toward fully down or up with P/W sub-switch.

OR

ON-BOARD

Check power window motor electrical ripple in Power Window monitor (Mode IV) mode (Refer to On-board Diagnoses EL-86.)

OK → Check LAN communication again.

NG → Replace LCU 01-B.

NG (from CHECK POWER WINDOW AUTOMATIC SWITCH CIRCUIT) ↓

B

1) Disconnect LCU-01-B 12-pin connector and P/W sub-switch (Front LH) connector.
2) Check continuity.

Terminals	Continuity
⑤ - ③	Yes
⑥ - ④	

NG → Repair harness.

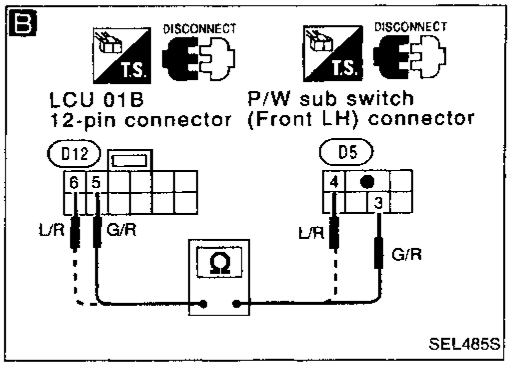
OK → **C**

Check power window automatic down signal when driver's P/W sub-switch is completely pressed.

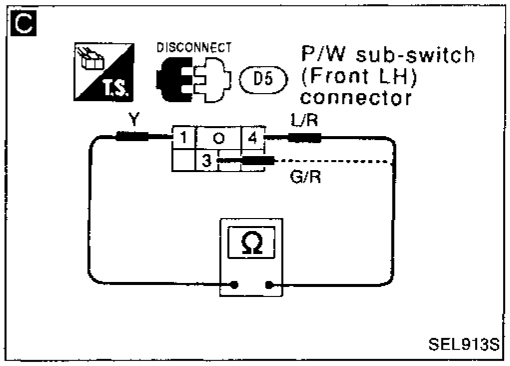
Continuity should exist.

OK → Check P/W sub-switch circuit and LAN communication again.

NG → Replace P/W sub-switch (Front LH).



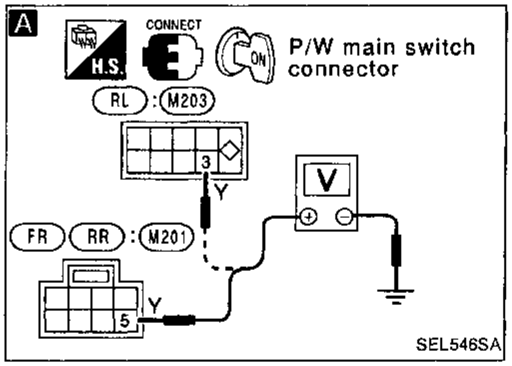
SEL485S



SEL913S

GI
MA
EM
LC
EF &
EC
FE
AT
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

Trouble Diagnoses (Cont'd)



DIAGNOSTIC PROCEDURE 4

SYMPTOM: Front RH window and rear windows do not operate using power window main switch on center console. They operate using respective sub-switches.

A

CHECK POWER SOURCE FOR POWER WINDOW MAIN SWITCH.
Check voltage between P/W main switch connector terminal ⑤ or ③ and ground.

Terminals	Voltage
⑤ - Ground	Battery voltage
③ - Ground	

NG → Check battery harness.

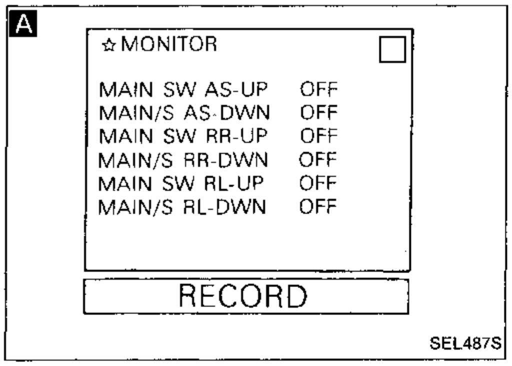
OK ↓

Go to DIAGNOSTIC PROCEDURE 5.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

SYMPTOM: Front RH window and one or more of the rear windows do not raise or lower using power window main switch on center console.


A

☆MONITOR ☐

MAIN SW AS-UP	OFF
MAIN/S AS-DWN	OFF
MAIN SW RR-UP	OFF
MAIN/S RR-DWN	OFF
MAIN SW RL-UP	OFF
MAIN/S RL-DWN	OFF

RECORD

SEL487S

CHECK CENTER CONSOLE POWER WINDOW MAIN SWITCH CIRCUIT FOR TROUBLE PORTION.

A CONSULT

See "MAIN SW UP or DOWN" in DATA MONITOR mode.

"MAIN SW UP or DOWN" should change from "OFF" to "ON" when pushing power window main switches.

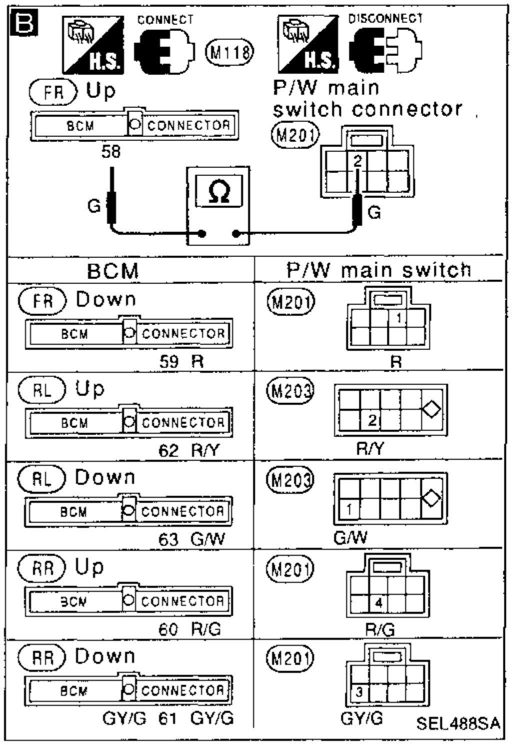
OR

ON-BOARD

Check power window main switch operation in Switch monitor (Mode II) mode. (Refer to On-board Diagnoses EL-82.)

OK → Check LAN communication again.

NG ↓



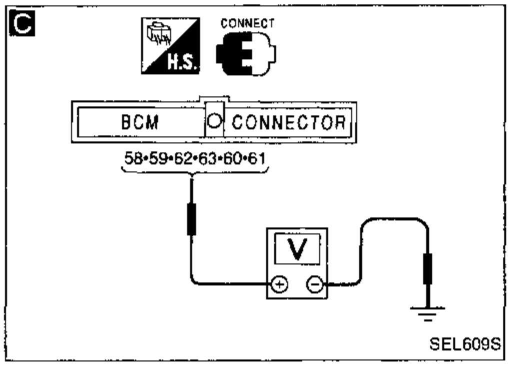
B

1) Disconnect power window main switch connectors.
2) Check continuity in troubled circuit selected from those indicated in the following table.

		Terminals	Continuity
Front RH	Up	(58) - ②	Yes
	Down	(59) - ①	
Rear LH	Up	(62) - ②	
	Down	(63) - ①	
Rear RH	Up	(60) - ④	
	Down	(61) - ③	

NG → Repair harness.

OK ↓



C

1) Connect power window main switch connectors.
2) Check battery voltage when power window is as follows:

Main switch operation		Terminals	Battery voltage
Front RH	Up	(58) - Ground	Yes
	Down	(59) - Ground	
Rear LH	Up	(62) - Ground	
	Down	(63) - Ground	
Rear RH	Up	(60) - Ground	
	Down	(61) - Ground	

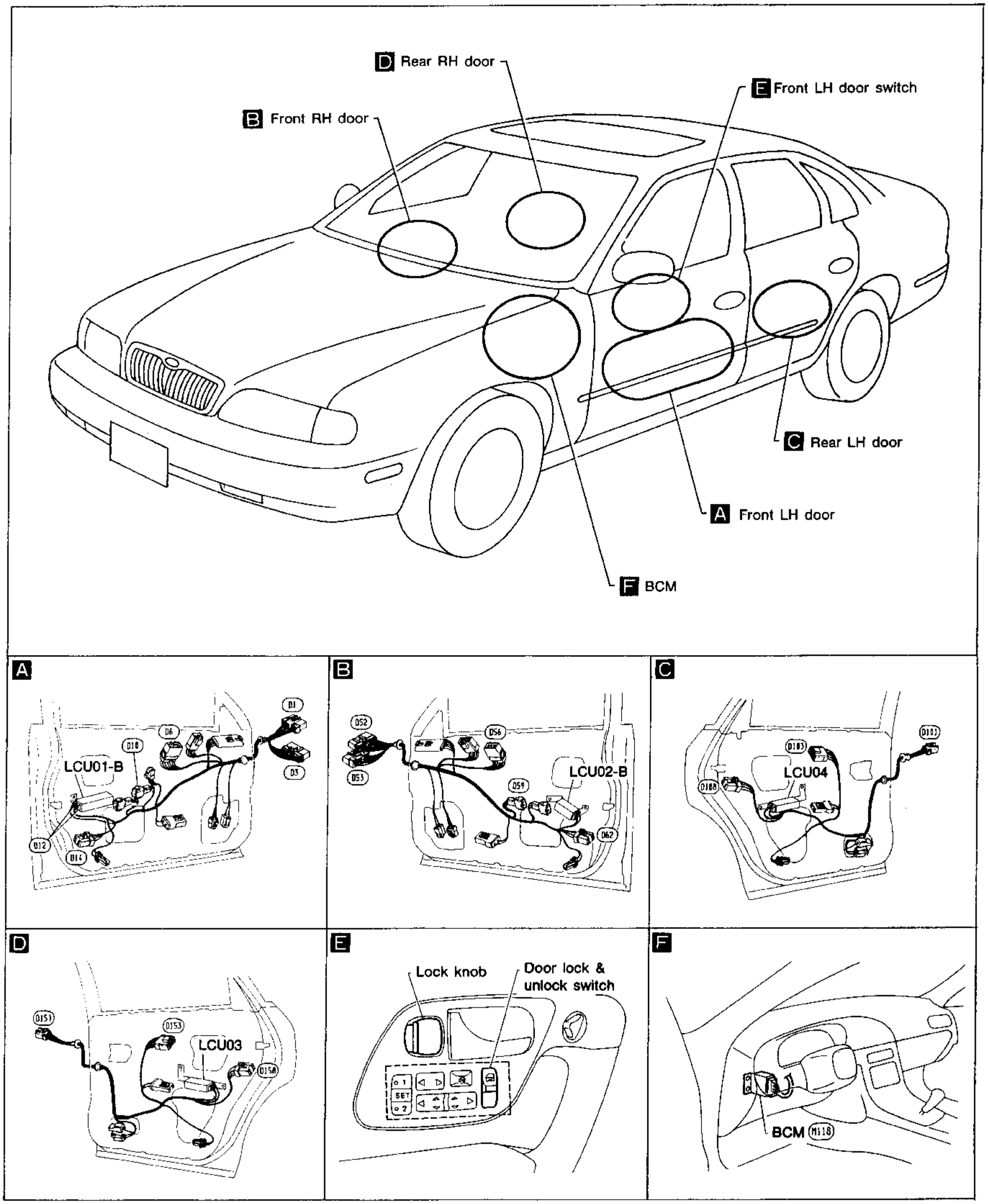
NG → Replace power window main switch.

OK ↓

Check power window main switch circuit and LAN communication again.

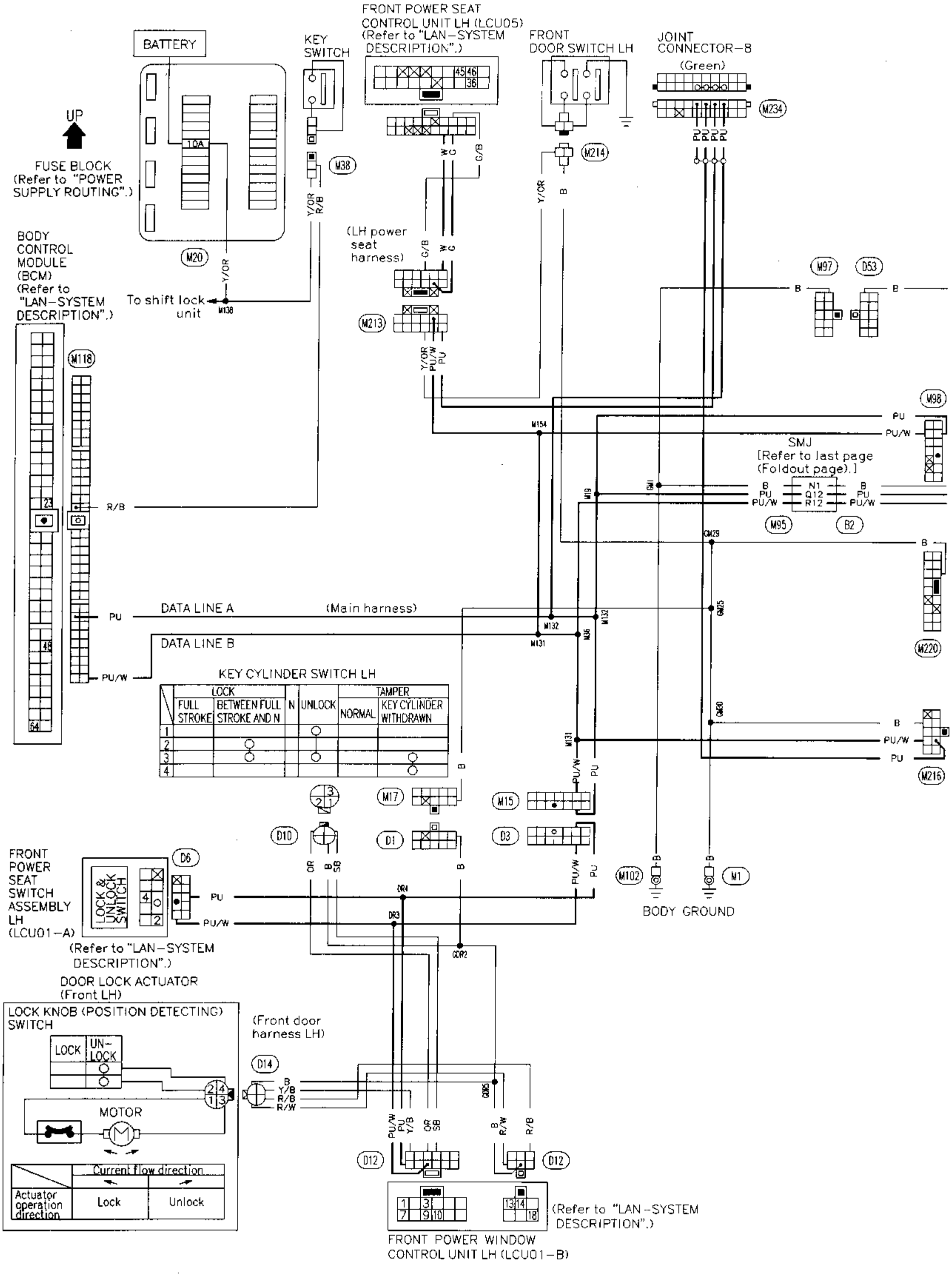
NOTE

Component Parts and Harness Connector Location

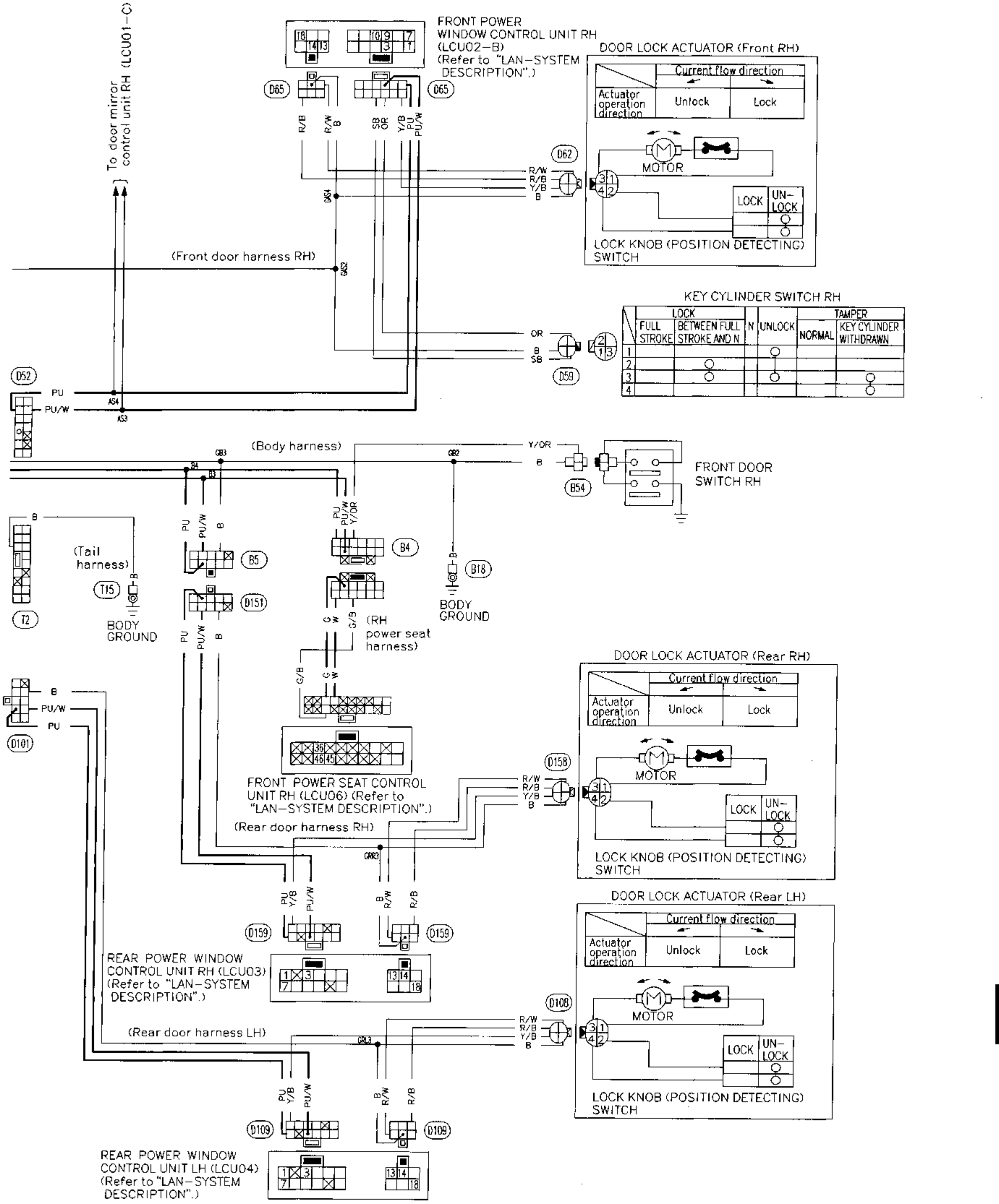


SEL447SA

Wiring Diagram

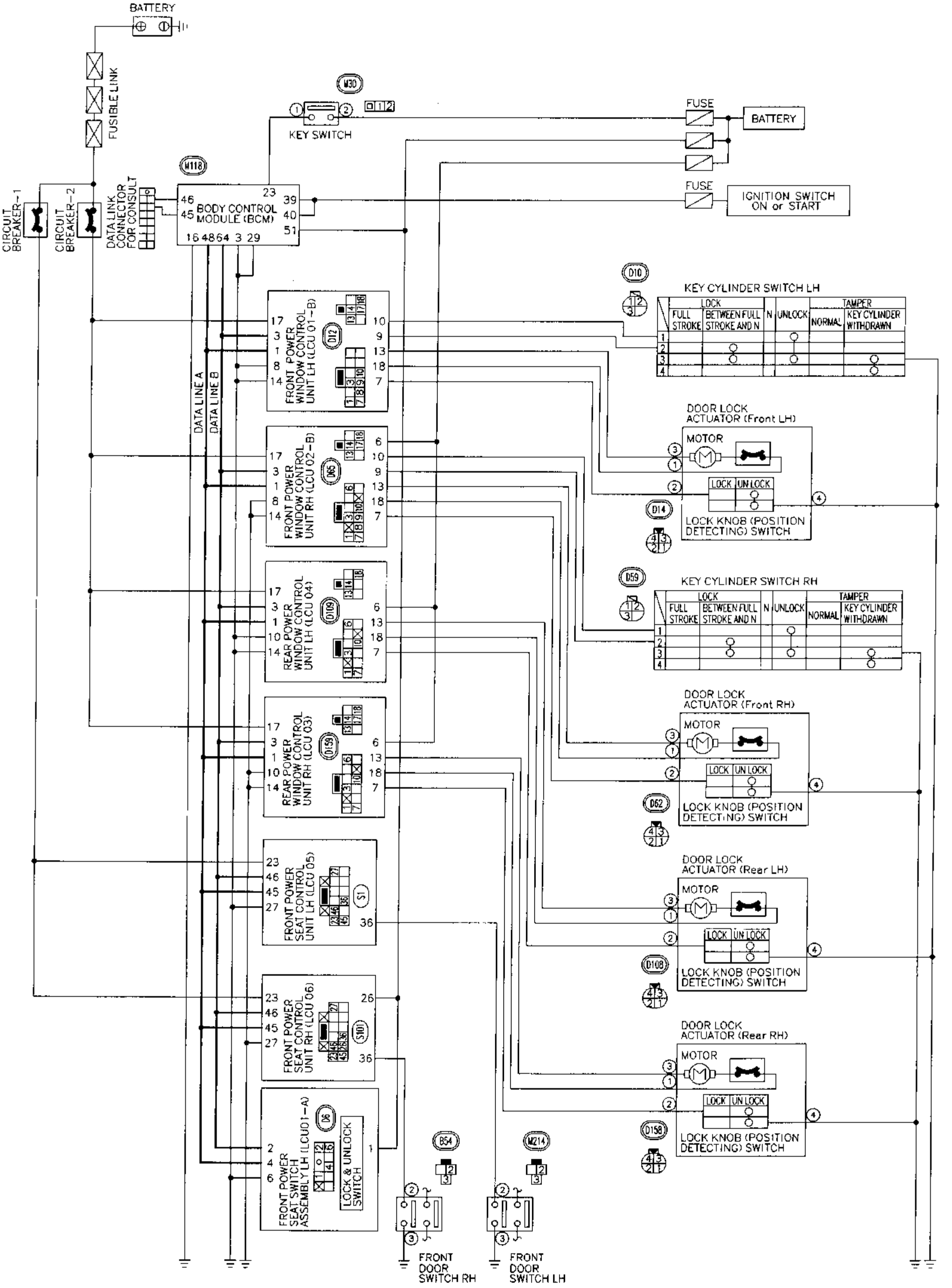


Wiring Diagram (Cont'd)



MEL738D

Schematic



MEL814D

Trouble Diagnoses

OPERATIVE CONDITION

- The lock & unlock switch on front LH door trim can lock and unlock all doors.
- With the lock knob on front LH or RH door set to "LOCK", all doors are locked.
- With the door key inserted in the key cylinder on front LH or RH door, turning it to "LOCK", will lock all doors; turning it to "UNLOCK" once unlocks the corresponding door; turning it to "UNLOCK" again within 3 seconds after the first unlock operation unlocks all of the other doors.

However, if the ignition key is in the steering key cylinder and one or more of the front doors are open, setting the lock & unlock switch, lock knob, or the door key to "LOCK" locks the doors once but then immediately unlocks them. — (KEY REMINDER DOOR SYSTEM)

TROUBLE SYMPTOM

Perform "LAN Communication Check" (refer to EL-100) and "SELF DIAG RESULTS" mode in DOOR LOCK with CONSULT or On-board Diagnosis-Mode III (refer to EL-84) before starting with the following items:

- Key reminder door system does not operate properly. ———— DIAGNOSTIC PROCEDURE 1
  If any of the following symptoms occur, key reminder door system is malfunctioning.
  With ignition key removed from the steering key cylinder and all doors closed, moving the lock & unlock switch or lock knob on the front LH or RH door trim unlocks all doors the instant they are locked; with ignition key inserted into the steering key cylinder and front LH or RH door opened, moving the lock & unlock switch or lock knob on the front LH or RH door trim to "Lock" does not unlock all doors.
- One or more of the doors do not unlock or lock using door lock & unlock switches, lock knob or door key, as shown in table below.

Do all doors lock or unlock properly using door lock & unlock switch?	All doors malfunction. →	DIAGNOSTIC PROCEDURE 2
Do all doors lock or unlock properly using door key (inserted into front LH or RH door key cylinder)?	All doors malfunction. →	DIAGNOSTIC PROCEDURE 3
Do all doors lock or unlock properly using lock knob on front LH or RH door?	All doors malfunction. →	DIAGNOSTIC PROCEDURE 4

↓ One of the doors malfunctions.

DIAGNOSTIC PROCEDURE 5

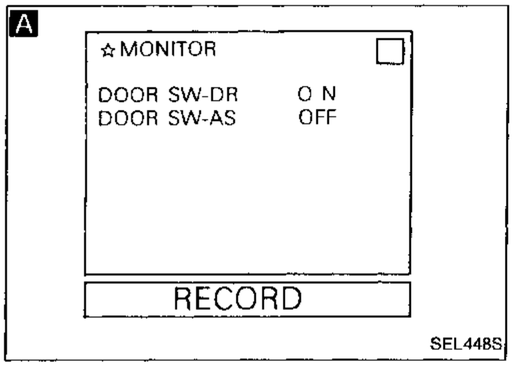
The following ABBREVIATIONS are used in this Trouble Diagnoses.

(FL): Front LH
(FR): Front RH
(RL): Rear LH
(RR): Rear RH

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

SYMPTOM: Key reminder door system does not operate properly.



☆MONITOR ☐

DOOR SW-DR O N
DOOR SW-AS OFF

RECORD

SEL448S

A CHECK DOOR SWITCH CIRCUIT.

CONSULT

See "DOOR SW DR" and "DOOR SW AS" in DATA MONITOR mode.

Front LH, RH door	"DOOR SW" display
Open	"ON"
Closed	"OFF"

— OR —

ON-BOARD

Check front LH and RH door switches in Switch monitor (Mode II) mode. (Refer to On-board Diagnoses EL-82.)

OK → Go to next page Ⓐ.

NG ↓

B

1) Disconnect LCU 12-pin connector, and front door switch connector.
2) Check continuity.

Terminals	Continuity
㊱ - ②	Yes

NG → Repair harness.

OK ↓

C

Check harness continuity between front door switch connector terminal ③ and body ground.
Continuity should exist.

NG → Repair ground harness.

OK ↓

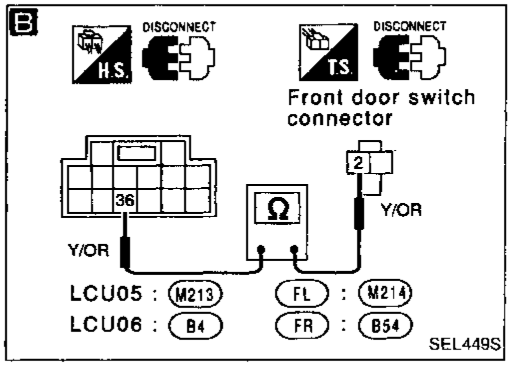
D

Check continuity of door switch circuit with door open.
Continuity should exist.

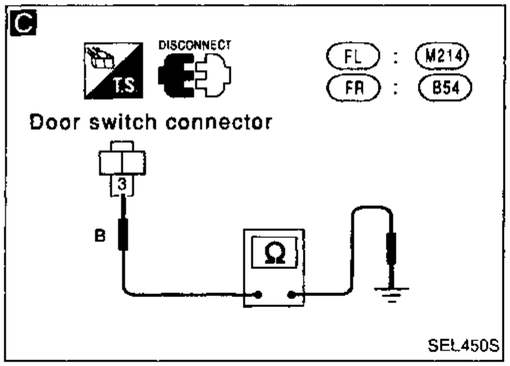
NG → Replace door switch.

OK ↓

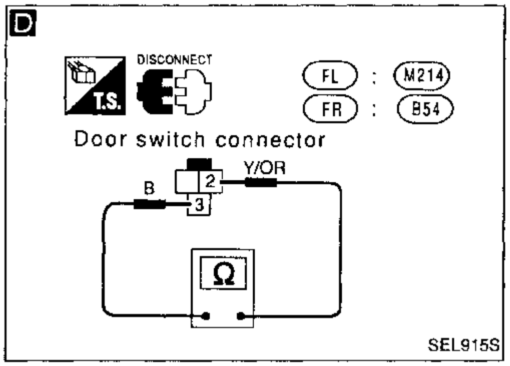
Check door switch circuit and LAN communication again.



SEL449S

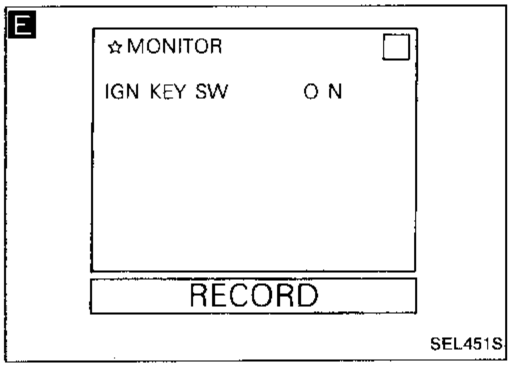


SEL450S



SEL915S

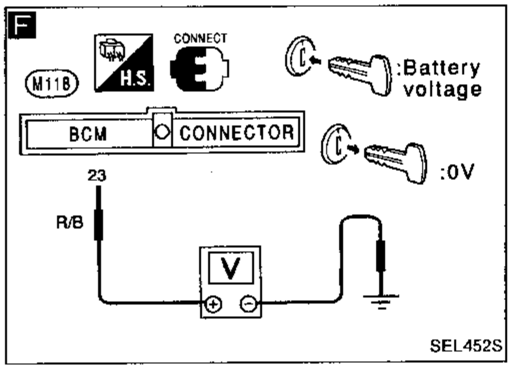
Trouble Diagnoses (Cont'd)

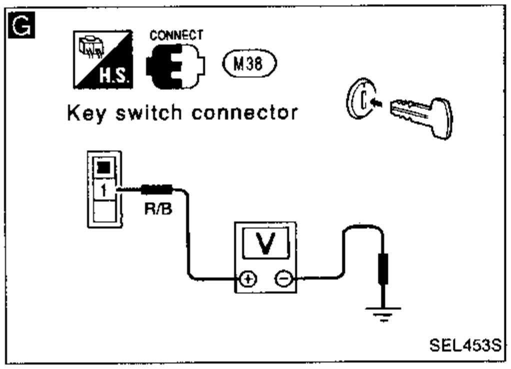


☆MONITOR ☐

IGN KEY SW ON

RECORD





Ⓐ

CHECK KEY SWITCH CIRCUIT.

E CONSULT

See "IGN KEY SW" in DATA MONITOR mode.
"IGN KEY SW" should be "ON" when IGN key is inserted in steering key cylinder.

OR

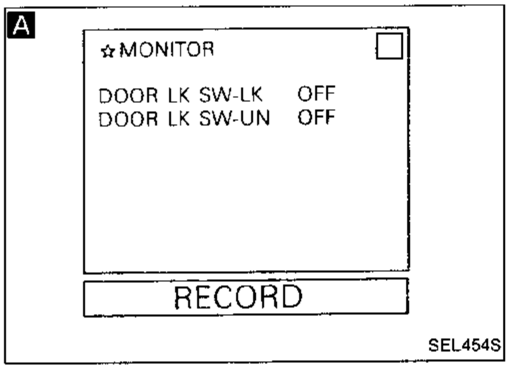
F TESTER

Check voltage when key is inserted in steering key cylinder.
Battery voltage should exist.

NG → **G** Check voltage of key switch connector terminal ① when key is inserted in steering key cylinder.
Battery voltage should exist.

- OK → Repair harness between key switch and BCM connector.
- NG → Check key switch unit and fuse circuit.

OK → Go to DIAGNOSTIC PROCEDURE 5.



☆MONITOR ☐

DOOR LK SW-LK OFF
DOOR LK SW-UN OFF

RECORD

DIAGNOSTIC PROCEDURE 2

SYMPTOM: All doors do not lock or unlock using the door lock & unlock switch.

CHECK DOOR LOCK & UNLOCK SWITCH CIRCUIT.

A CONSULT

See "DOOR LK SW-LK or UN" in DATA MONITOR mode. These signals should be "ON" when door lock switch was operated.

OR

ON-BOARD

Check door lock & unlock switch operation in Switch monitor (Mode II) mode. (Refer to On-board Diagnoses. EL-82)

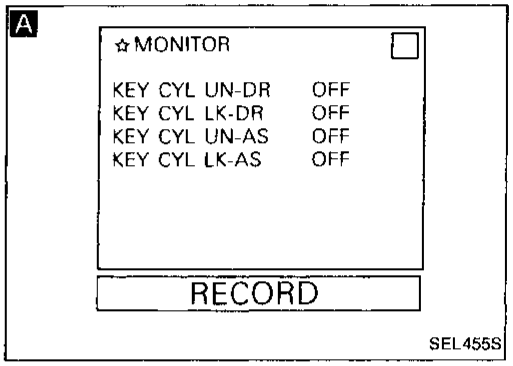
OK → Go to DIAGNOSTIC PROCEDURE 5.

NG → Replace front LH power seat switch assembly (LCU01-A).

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

SYMPTOM: All except the front LH or RH door do not lock or unlock using the front LH or RH door lock & unlock key inserted into the door key cylinder.



```
KEY CYL UN-DR    OFF
KEY CYL LK-DR    OFF
KEY CYL UN-AS    OFF
KEY CYL LK-AS    OFF
```

SEL455S

CHECK DOOR KEY CYLINDER SIGNAL.

A CONSULT

See "KEY CYL DR or AS" in DATA MONITOR mode.
These signals should be "ON" when ignition key inserted in the door key cylinder was turned to lock or unlock.
If signals turn from "OFF" to "ON" too quickly on CONSULT display when key cylinder is turned, check these signals in the graphic mode.
(Refer to CONSULT OPERATION MANUAL.)

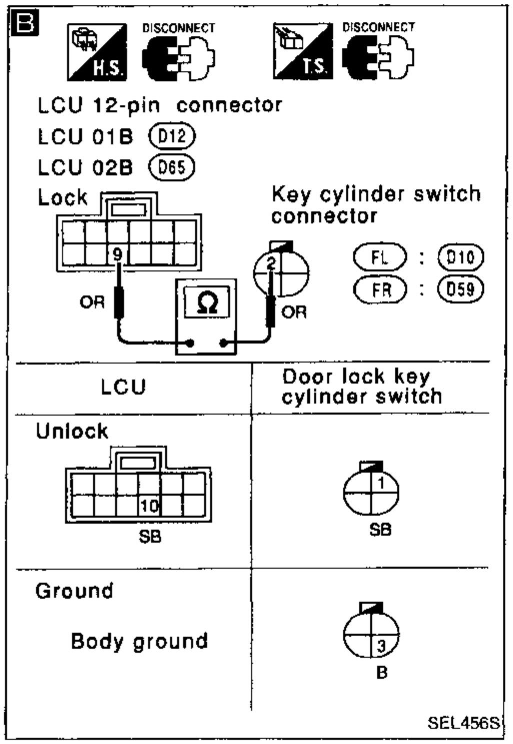
— OR —

ON-BOARD

Check front LH or RH door lock key cylinder lock and unlock switch in Switch monitor (Mode II) mode.
(Refer to On-board Diagnoses EL-82.)

OK → Go to DIAGNOSTIC PROCEDURE 5.

NG ↓



SEL456S

B

1) Disconnect 12-pin connector from LCU01-B, and connector from key cylinder switch.
2) Check continuity.

Terminals	Continuity
⑨ - ②	Yes
⑩ - ①	
GND - ③	

NG → Repair harness.

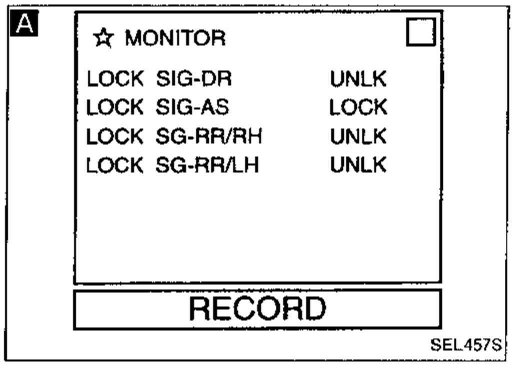
OK ↓

Check door lock key cylinder switch circuit.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

SYMPTOM: All except the front LH or RH doors do not lock using the front LH or RH door lock knob.

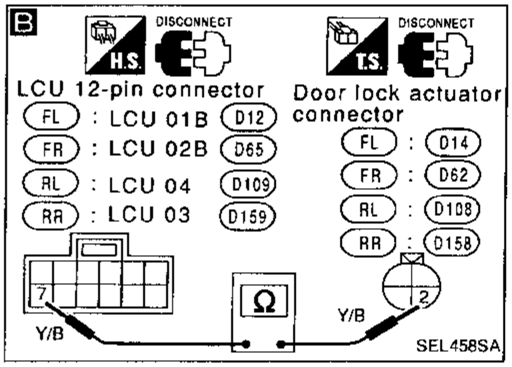


☆ MONITOR ☐

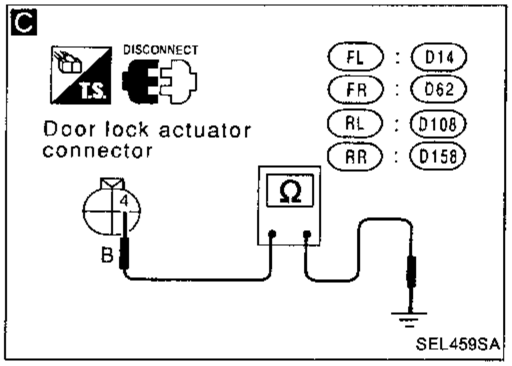
LOCK SIG-DR	UNLK
LOCK SIG-AS	LOCK
LOCK SG-RR/RH	UNLK
LOCK SG-RR/LH	UNLK

RECORD

SEL457S



SEL458SA



SEL459SA

CHECK DOOR LOCK KNOB SWITCH CIRCUITS.

A CONSULT

See "LOCK SIG SW" in DATA MONITOR mode.
"LOCK SIG SW" should be "LOCK" when lock knob was locked.

OR

ON-BOARD

Check front door lock knob operation in Switch monitor (Mode II) mode.
(Refer to On-board Diagnoses EL-82.)

OK → Go to DIAGNOSTIC PROCEDURE 5.

NG ↓

B

1) Disconnect LCU 12-pin connector and door lock actuator connector.
2) Check harness continuity between LCU 12-pin connector terminal ⑦ and door lock actuator connector terminal ②.

Continuity should exist.

NG → Repair harness.

OK ↓

C

CHECK GROUND CIRCUIT FOR FRONT LH OR RH LOCK KNOB SWITCH.
Check harness continuity between door lock actuator connector harness terminal ④ and body ground.

Continuity should exist.

NG → Repair ground harness.

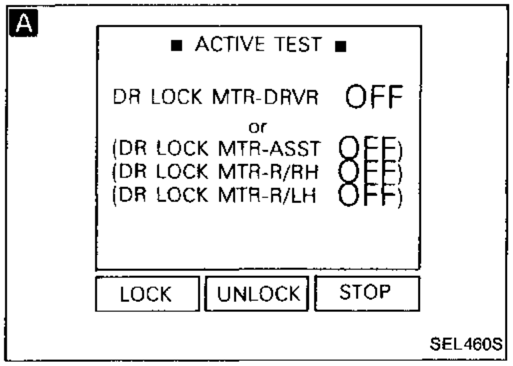
OK ↓

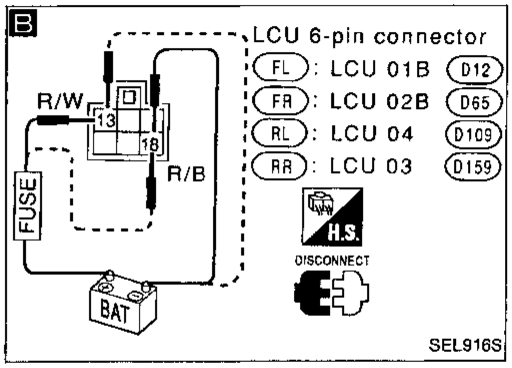
Replace front door lock actuator.

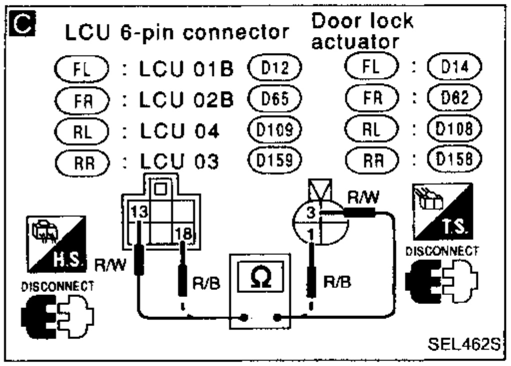
Trouble Diagnoses (Cont'd)

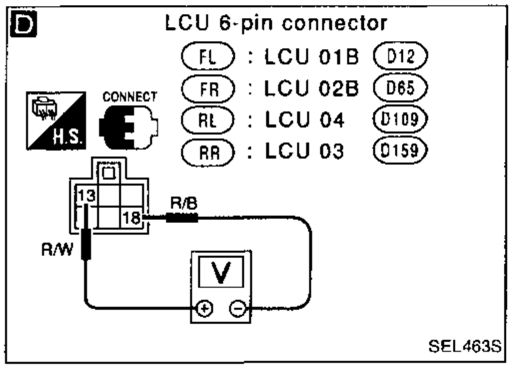
DIAGNOSTIC PROCEDURE 5

SYMPTOM: Each door does not lock or unlock using its door lock knob. (Door lock motor malfunctions.)









CHECK DOOR LOCK MOTOR OPERATION.

A CONSULT

See "DR LOCK MTR" in ACTIVE TEST mode.

Perform operation shown on display.

Door lock motor should operate.

OR

B TESTER

1) Disconnect troubled door's Power Window Control Unit (LCU) 6-pin connector.
2) Check power door lock.

Door lock condition	Terminals	
	⊕	⊖
Locked	⑬	⑱
Unlocked	⑱	⑬

OK (CONSULT) → Check LAN Communication again.

OK (TESTER) → **D**

1) Connect power window control unit connector.
2) Check battery voltage when door lock is operated.

Terminals (⊕ - ⊖)
⑬ - ⑱

OK → Check LAN Communication again.

NG → Check LAN communication again. If LCU is incorrected, it must be replaced.

NG → **C**

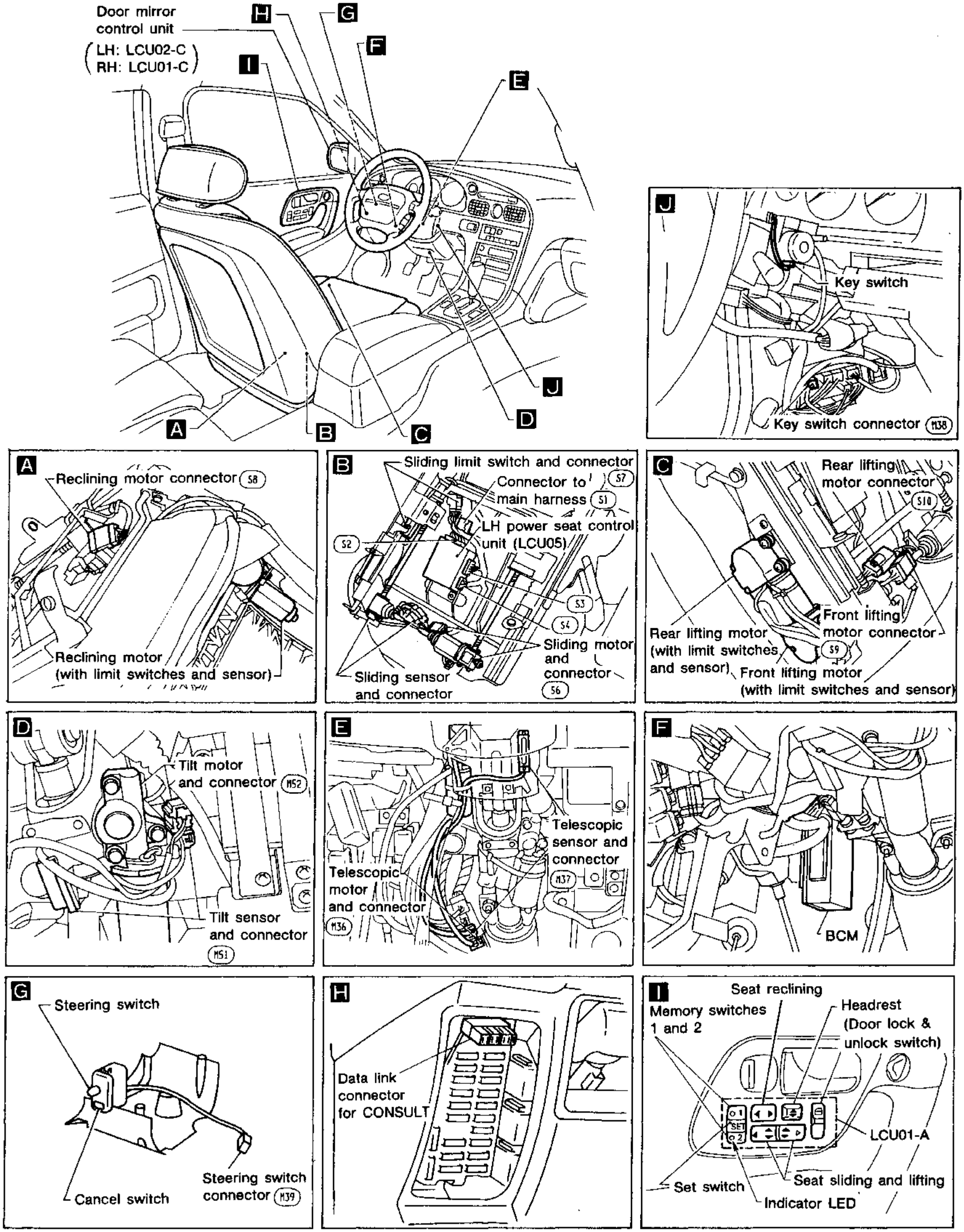
1) Disconnect troubled door's door lock actuator connector.
2) Check harness continuity between LCU 6-pin connector and door lock actuator connector terminals.

Terminals
⑬ - ③
⑱ - ①

NG → Repair harness.

OK → Replace door lock motor.

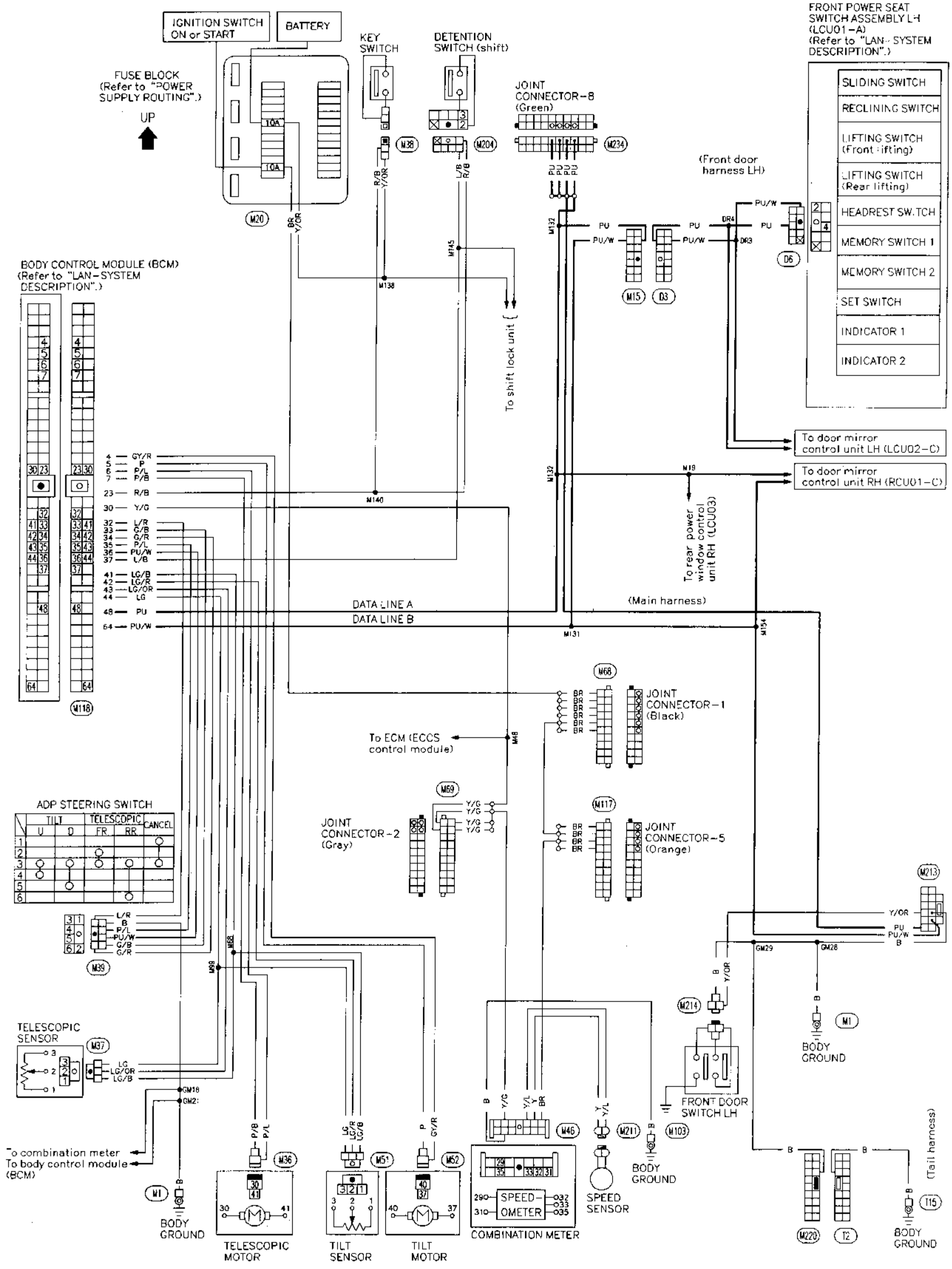
Component Parts and Harness Connector Location



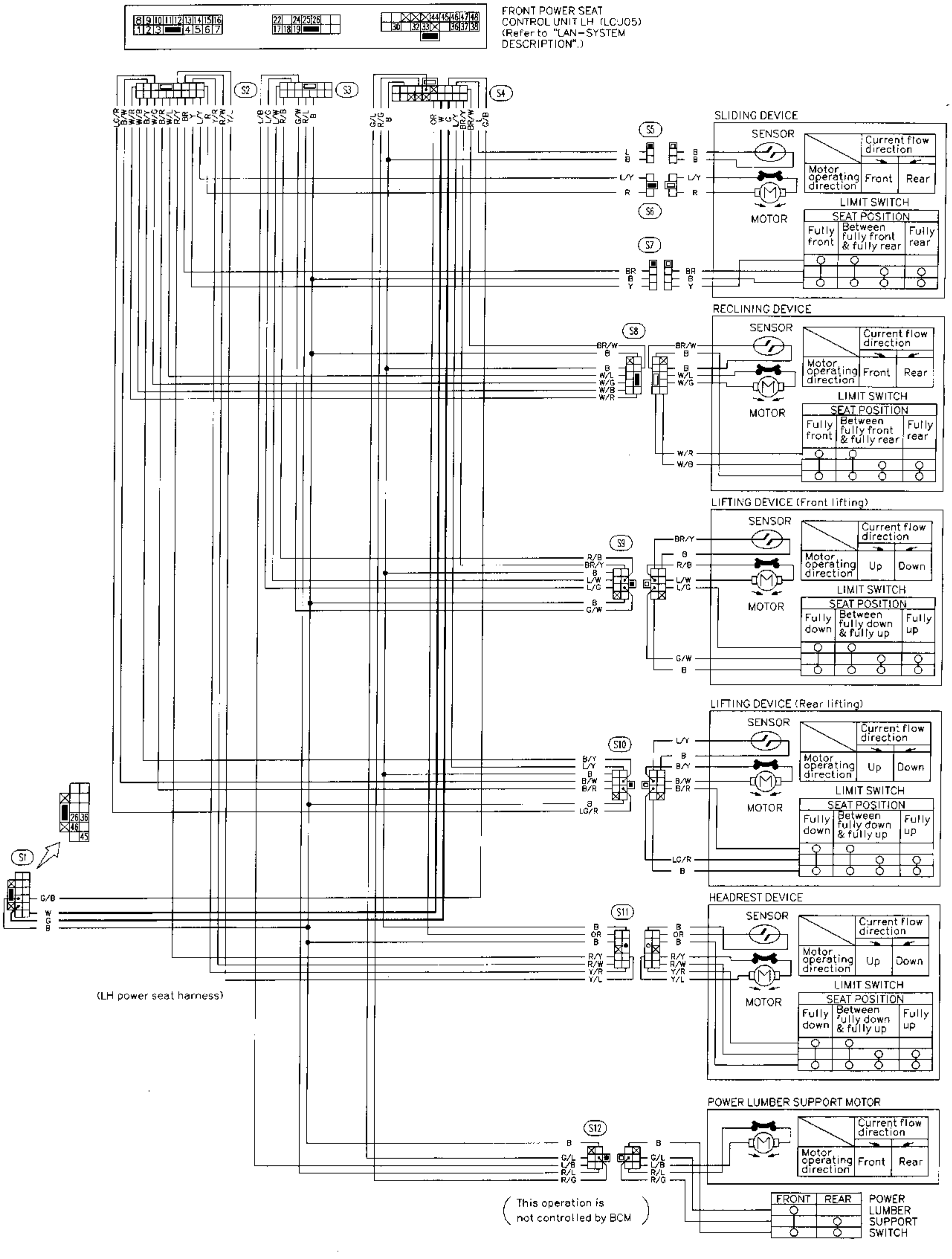
SEL400S

GI
MA
EM
LC
EF & EC
FE
AT
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

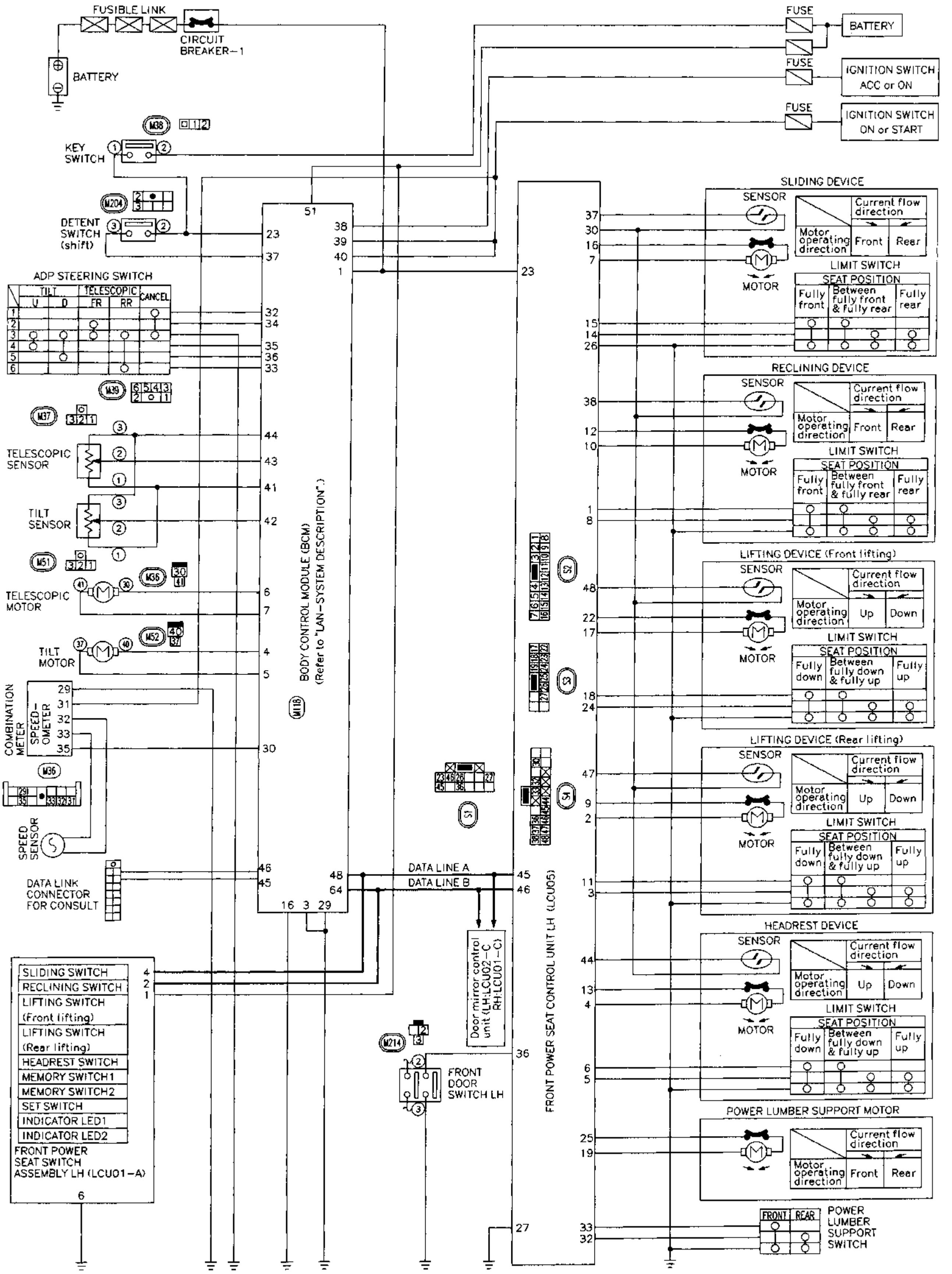
Wiring Diagram



Wiring Diagram (Cont'd)



Schematic


FUSIBLE LINK
CIRCUIT BREAKER-1
BATTERY
FUSE
BATTERY
FUSE
IGNITION SWITCH ACC or ON
FUSE
IGNITION SWITCH ON or START
KEY SWITCH
DETENT SWITCH (shift)
ADP STEERING SWITCH
TILT
TELESCOPIC
CANCEL
U
D
FR
RR
TELESCOPIC SENSOR
TILT SENSOR
TELESCOPIC MOTOR
TILT MOTOR
COMBINATION METER
SPEEDOMETER
SPEED SENSOR
DATA LINK CONNECTOR FOR CONSULT
BODY CONTROL MODULE (BCM) (Refer to "LAN-SYSTEM DESCRIPTION".)
DATA LINE A
DATA LINE B
Door mirror control unit (LH:LCU02-C RH:LCU01-C)
FRONT DOOR SWITCH LH
FRONT POWER SEAT CONTROL UNIT LH (LCU05)
SLIDING SWITCH
RECLINING SWITCH
LIFTING SWITCH (Front lifting)
LIFTING SWITCH (Rear lifting)
HEADREST SWITCH
MEMORY SWITCH1
MEMORY SWITCH2
SET SWITCH
INDICATOR LED1
INDICATOR LED2
FRONT POWER SEAT SWITCH ASSEMBLY LH (LCU01-A)
SLIDING DEVICE
SENSOR
MOTOR
Current flow direction
Motor operating direction
Front
Rear
LIMIT SWITCH
SEAT POSITION
Fully front
Between fully front & fully rear
Fully rear
RECLINING DEVICE
LIFTING DEVICE (Front lifting)
Up
Down
Fully down
Between fully down & fully up
Fully up
LIFTING DEVICE (Rear lifting)
HEADREST DEVICE
POWER LUMBER SUPPORT MOTOR
FRONT
REAR
POWER LUMBER SUPPORT SWITCH
M38
M204
M39
M37
M51
M36
M52
M118
M214
S1
S2
S3
S4
MEL815D

System Description

OPERATIVE CONDITION

The drive position can be set in 2 ways, manually and automatically.

Manual operation:

The driver's seat can be adjusted for rake, front cushion height, rear cushion height, pedal reach and headrest height with the LH power seat switches. The steering column can be adjusted for tilt and reach (telescopic) with the steering switch. The door mirror can be adjusted in the desired direction with the remote control switch when the IGN switch is "ACC". Except for the door mirror, manual setting can be operated with the IGN key removed from steering key cylinder.

Automatic operation:

The driver's seat, steering column and LH, RH door mirrors are adjusted to the proper positions for the driver automatically, in 3 different ways: MEMORY AUTOMATIC SET, AUTOMATIC EXITING SETTING and AUTOMATIC SET RETURN. (Automatic Drive Positioner = ADP)

(1) CONDITIONS INHIBITING AUTOMATIC OPERATION

- When the A/T selector lever is in any position other than "P".
- When the vehicle speed is above 7 km/h (4 MPH).
- When one of the position switches for the driver's seat or the steering column is turned on.
- When the cancel switch is ON.
- When the tilt or telescopic sensor circuit is damaged.
- All data retained in memory are erased when battery is disconnected.

(2) PROCEDURE FOR MEMORIZING THE DESIRED POSITIONS

Adjust the position of driver's seat, steering column and outside door mirrors with manual set operations.

↓ Ignition switch "ON".

	Indicator LEDs
Touch set switch.	(1) Indicator LED for which driver's seat positions are already retained in memory illuminates for 5 seconds.
	(2) Indicator LED for which driver's seat positions are not entered in memory illuminates for 0.5 seconds.

↓ Within 5 seconds.

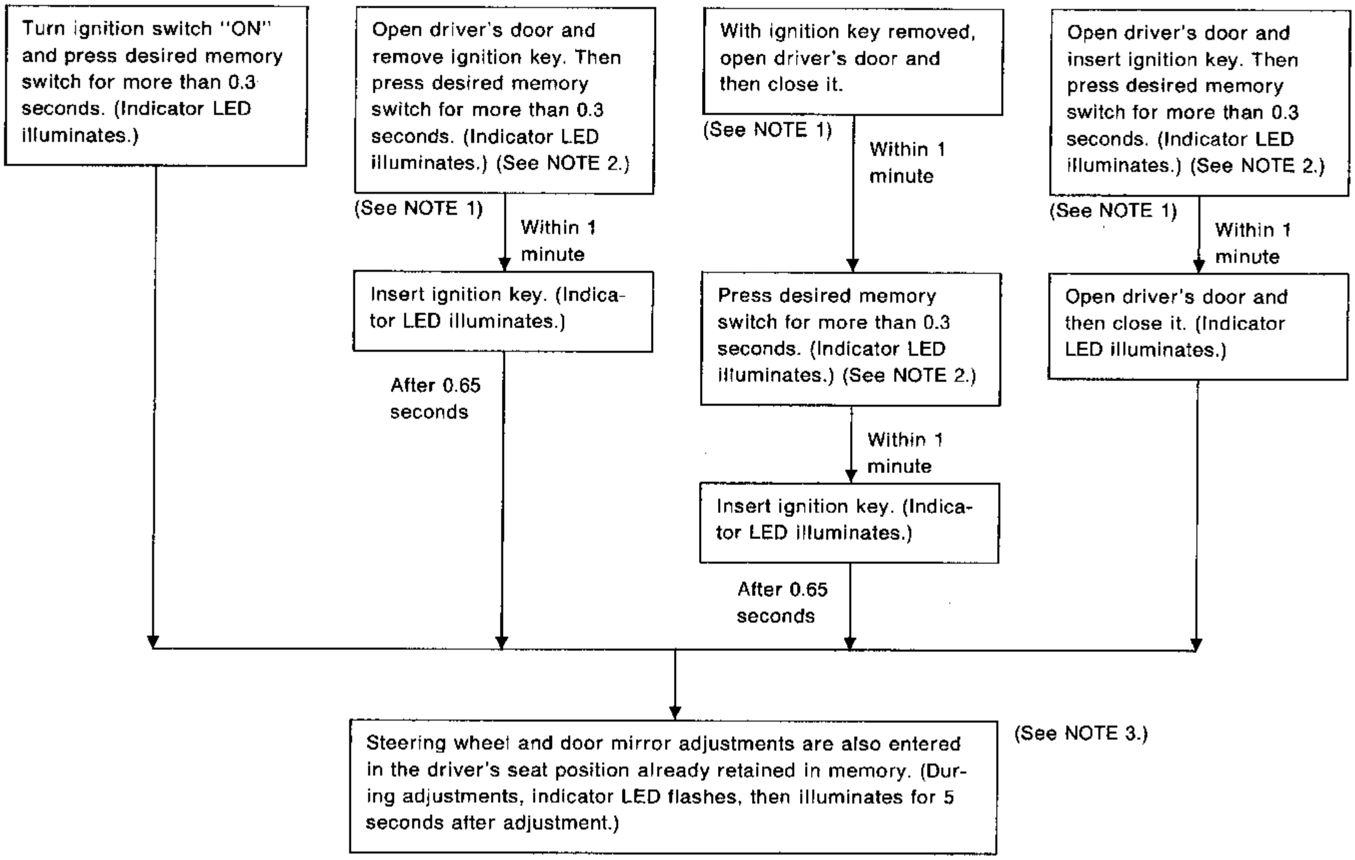
	Indicator LEDs
Press memory switch for which driver's seat positions are to be entered in memory for more than 0.5 seconds. (2 driver's seat positions can be memorized.)	(1) To modify driver's seat positions, press memory switch. Indicator LED will then go out for 0.5 seconds and then illuminate for 5 seconds.
	(2) To enter driver's seat positions in blank memory, indicator LED illuminates for 5 seconds after memory switch is pressed.

↓

END OF MEMORY SETTING

NOTE: When memory switch for which driver's seat positions are already retained in memory is pressed, new seat positions will be retained in memory in place of the previously set positions.

(3) MEMORY AUTOMATIC SET



Turn ignition switch "ON" and press desired memory switch for more than 0.3 seconds. (Indicator LED illuminates.)

Open driver's door and remove ignition key. Then press desired memory switch for more than 0.3 seconds. (Indicator LED illuminates.) (See NOTE 2.)

Insert ignition key. (Indicator LED illuminates.)

With ignition key removed, open driver's door and then close it.

Press desired memory switch for more than 0.3 seconds. (Indicator LED illuminates.) (See NOTE 2.)

Insert ignition key. (Indicator LED illuminates.)

Open driver's door and insert ignition key. Then press desired memory switch for more than 0.3 seconds. (Indicator LED illuminates.) (See NOTE 2.)

Open driver's door and then close it. (Indicator LED illuminates.)

Steering wheel and door mirror adjustments are also entered in the driver's seat position already retained in memory. (During adjustments, indicator LED flashes, then illuminates for 5 seconds after adjustment.)

NOTES: (1) Do not keep cancel switch pressed as it will not operate.
(2) Seat sliding moves about 40 mm (1.57 in) rearward from the memorized position.
(3) Three items, the driver's seat position, steering wheel and door mirror adjustment (see the following Table), operate simultaneously in the order of priority.

The order of priority	Operated portion
1	Seat sliding (and door mirror)
2	Steering telescopic
3	Steering tilt
4	Seat reclining
5	Seat front lifting
6	Seat rear lifting
7	Seat headrest height

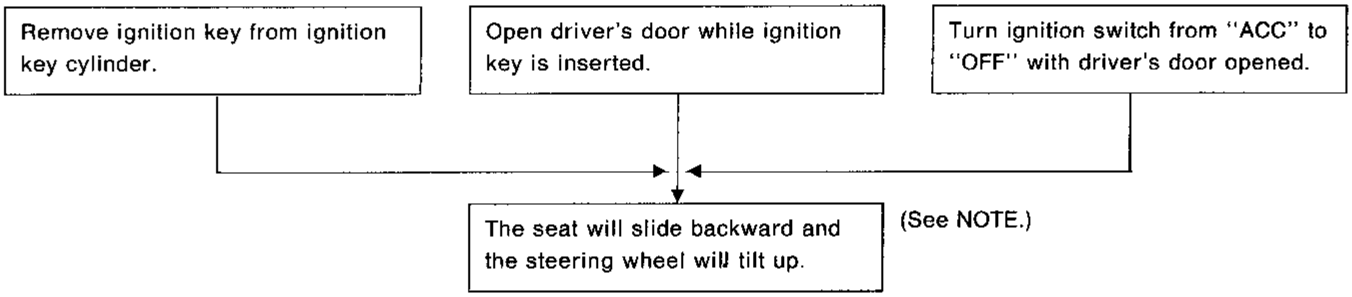
System Description (Cont'd)

(4) AUTOMATIC EXITING SETTING

For ease of entry and exit, move driver's seat and steering wheel to "exiting" positions.

"Exiting" positions:

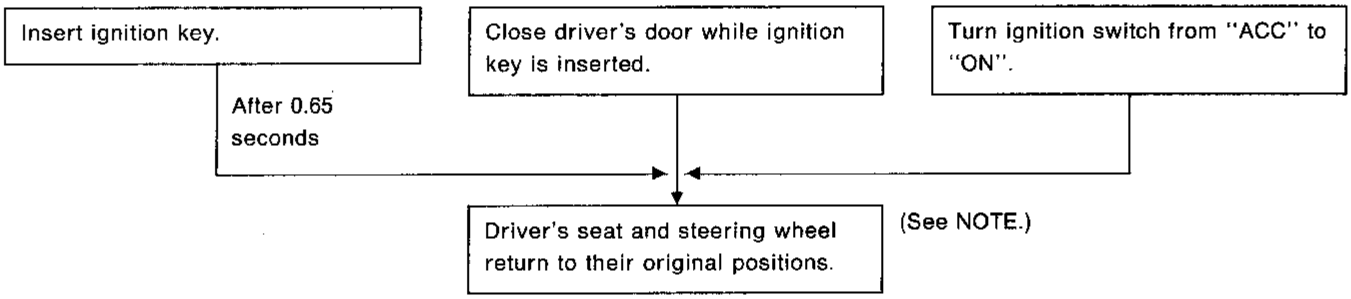
Driver's seat ... Moves about 40 mm (1.57 in) slide rear from normal sitting position.
Steering wheel ... Tilts up completely and telescopes forward.



NOTE: Driver's seat slides and steering wheel tilts and telescopes simultaneously.

(5) AUTOMATIC SET RETURN

With driver's seat and steering wheel set to their "exiting" positions, operating one of the following procedures moves them to the positions previously retained in memory.



NOTE: Driver's seat slides and steering wheel tilts and telescopes simultaneously.

Malfunction Indication

Indicator LEDs of memory switch 1 and 2 blink when abnormal condition occurs to the parts relating to seat sliding, seat reclining and steering tilt as follows. When indicator LEDs are repeatedly blinking, conduct trouble diagnosis with CONSULT (Refer to EL-95.) or on-board self-diagnosis system (Refer to EL-88.) and repair malfunctioning parts as required.
After repair, please erase the data stored in BCM using CONSULT.

INPUT ABNORMAL

Detection

If "ON" signals sent from any of the manual switches under the vehicle conditions indicated in the following chart continues for a period of at least T1, the LEDs of memory switch 1 and 2 blink as an input malfunction.

OPERATED PORTION	T1	Vehicle condition
Seat sliding	10±2 sec.	Only when vehicle is driven at speeds greater than 7 km/h (4 MPH).
Seat reclining	Same as above	Same as above
Steering tilt	Same as above	"ON" signals are detected regardless of vehicle speed.

Absolving

- While LEDs are blinking, neither automatic drive positioner nor manual operation (which indicates a malfunction) is effected.
- While LEDs are blinking, they go out as soon as switch input (which indicates a malfunction) is "OFF", releasing the "inoperative" mode.
  However, in the following cases (where the "inoperative" mode is not released), a switch may be seized. Replace the affected switch.
  ① CONSULT
  After self-diagnosis is performed using CONSULT and the CONSULT and BCM are disconnected, LEDs still blink.
  ② ON-BOARD (MODE V)
  Although on-board self-diagnosis is not performed, LEDs blink.
- After LEDs go out, if "AUTOMATIC EXISTING SETTING" for the automatic drive positioner is not effected, MEMORY, AUTOMATIC SET, etc., in relation to the automatic drive positioner will not be effected.

OUTPUT ABNORMAL

Detection

During the time the vehicle is being driven at speeds greater than 7 km/h (4 MPH), if any of the parts (indicated in the following chart) move more than the specified amount within a period of "T2" when no "ON" input is sent from any of the switches (indicated in the following chart) or an output from the automatic drive positioner is not produced, LEDs blink to indicate a malfunction.

OPERATED PORTION	T2	Allowable measurement
Seat sliding	Approx. 2.5 sec.	Within 6 mm (0.24 in)
Seat reclining	Same as above	Change angle within 1°
Steering tilt	Same as above	Change angle within 1°

Absolving

- While LED is blinking, neither automatic drive positioner nor manual operation (which indicates a malfunction) is effected.
- At the beginning of self-diagnosis using CONSULT or On-board, LED goes out and "inoperative" mode is canceled.
- If "AUTOMATIC EXISTING SETTING" for automatic drive positioner is not being effected, MEMORY, AUTOMATIC SET, etc., relating to the automatic drive positioner cannot be effected.

Trouble Diagnoses

TROUBLE SYMPTOM

Perform "LAN Communication Check" (refer to EL-100) and "SELF-DIAG RESULTS" mode in "AUTO DRIVE POSITIONER" with CONSULT or On-board self-diagnosis (Mode V) before starting with the following items.

- On-board self-diagnosis (Mode V) cannot be performed. (Refer to EL-88.) —— DIAGNOSTIC PROCEDURE 1
- Automatic drive positioner does not work for any function. —— DIAGNOSTIC PROCEDURE 2

- When one of automatic drive positioner's functions does not operate, use manual operation to check that affected function is still inoperative, then perform self-diagnosis as follows.

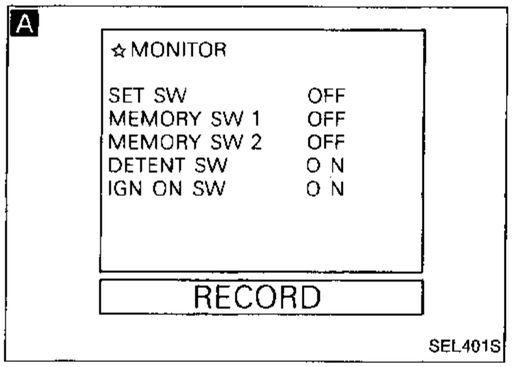
1) Steering column does not tilt or telescope forward or backward manually. —— DIAGNOSTIC PROCEDURE 3
2) None of the seats operate manually. —— DIAGNOSTIC PROCEDURE 4
3) One or more of the front and rear seat slide lifters and the headrest up-down controls do not operate manually. —— DIAGNOSTIC PROCEDURE 5 → DIAGNOSTIC PROCEDURES 6-1 to 6-5
4) Door mirrors do not set automatically. —— DIAGNOSTIC PROCEDURE 7

After repairing completely, make a final check of the system with "SELF-DIAG RESULTS" of consult or with On-board Diagnosis — Mode V. (Refer to EL-88.)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

SYMPTOM: On-board self-diagnoses cannot be performed. (Interior lamp, step lamp and ADP's LED do not flash.)

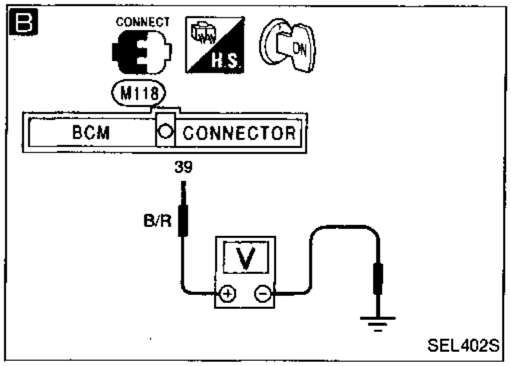

A

☆MONITOR

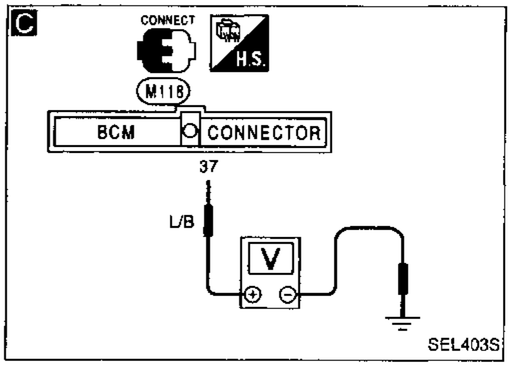
SET SW	OFF
MEMORY SW 1	OFF
MEMORY SW 2	OFF
DETENT SW	ON
IGN ON SW	ON

RECORD

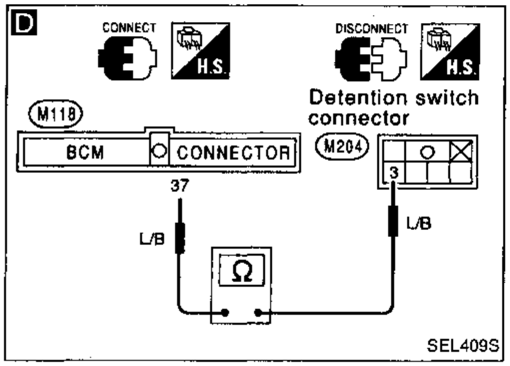
SEL401S



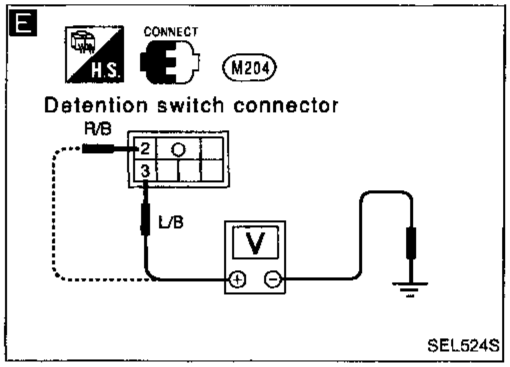
SEL402S



SEL403S



SEL409S



SEL524S

CHECK IGNITION SWITCH ON SIGNAL.

A CONSULT

See "IGN ON SW" in DATA MONITOR mode.

"IGN ON SW" should be "ON".

— OR —

B TESTER

Check voltage between BCM connector terminal ㊴ and ground while ignition switch is "ON".

Terminals	Voltage
㊴ - GND	Battery voltage

NG → Check ignition switch circuit.

↓ OK

CHECK DETENTION SWITCH SIGNAL.

A CONSULT

See "DETENT SW" in DATA MONITOR mode.

"DETENT SW" should be "OFF" when set A/T selector lever in "P" position.

— OR —

C TESTER

1) Set A/T selector lever in "P" position.
2) Check voltage.

Terminals	Voltage
㊲ - GND	About 12V → 0V

NG → D

1) Disconnect detention switch connector.
2) Check continuity.

Terminals	Continuity
㊲ - ③	Yes

NG → Repair harness.

↓ OK

E

1) Connect detention switch connector.
2) Check voltage with A/T selector lever in "P" position.

NG → Check detention switch or battery circuit.

OK → Check detention switch signal and LAN communication again.

↓ OK

CHECK SET SWITCH, MEMORY SWITCH 1 AND MEMORY SWITCH 2.

A CONSULT

See "SET SW", "MEMORY SW 1" and "MEMORY SW 2" in DATA MONITOR mode.

"SET SW", "MEMORY SW 1" and "MEMORY SW 2" should change from "OFF" to "ON" when pushing each switch.

— OR —

ON-BOARD

Check set switch, memory switch 1 and memory switch 2 operation in Switch monitor (Mode II) mode.
(Refer to On-board Diagnoses EL-82.)

NG → Check LAN communication again. If LCU 01-A is incorrected, it must be replaced.

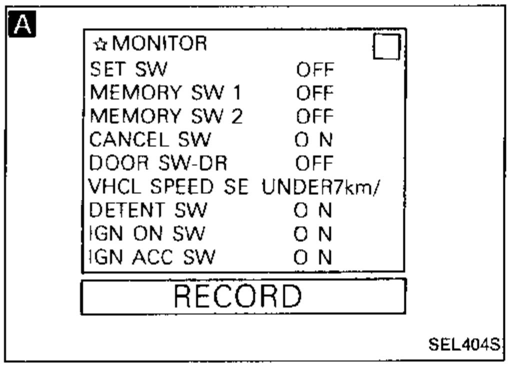
↓ OK

Check LAN communication again.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

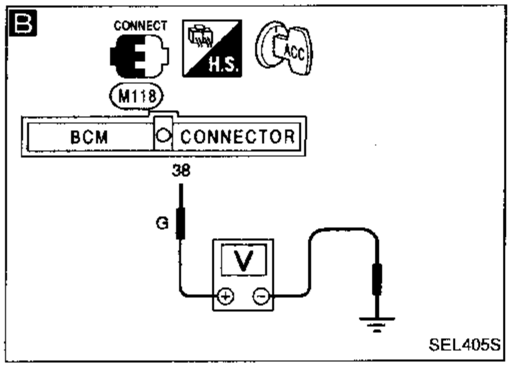
SYMPTOM: Automatic drive positioner does not function.


A

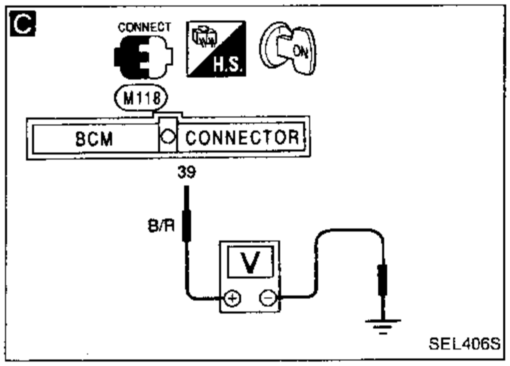
☆MONITOR	☐
SET SW	OFF
MEMORY SW 1	OFF
MEMORY SW 2	OFF
CANCEL SW	O N
DOOR SW-DR	OFF
VHCL SPEED SE	UNDER7km/
DETENT SW	O N
IGN ON SW	O N
IGN ACC SW	O N

RECORD

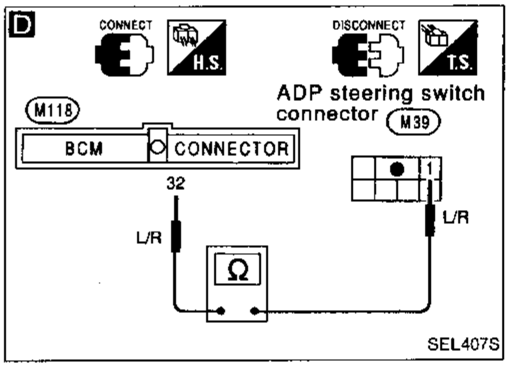
SEL404S



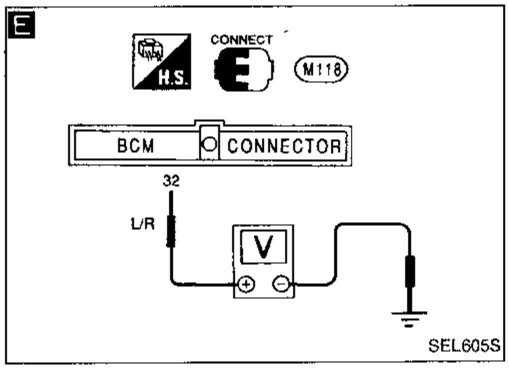
SEL405S



SEL406S



SEL407S



SEL605S

CHECK ACC SWITCH ON SIGNAL.

A CONSULT

See "IGN ACC SW" in DATA MONITOR mode.

"IGN ACC SW" should be "ON".

OR

B TESTER

Check voltage between BCM connector terminal ㊳ and ground while ignition switch is "ACC".

Terminals	Voltage
㊳ - GND	Battery voltage

NG → CHECK THE FOLLOWING.
- Fuse
- Harness continuity between BCM connector terminal ㊳ and fuse.

↓ OK

CHECK IGNITION SWITCH ON SIGNAL.

A CONSULT

See "IGN ON SW" in DATA MONITOR mode.

"IGN ON SW" should be "ON".

OR

C TESTER

Check voltage between BCM connector terminal ㊴ and ground while ignition switch is "ON".

Terminals	Voltage
㊴ - GND	Battery voltage

NG → CHECK THE FOLLOWING.
- Fuse
- Harness continuity between BCM connector terminal ㊴ and fuse.

↓ OK

CHECK CANCEL SWITCH CIRCUIT.

A CONSULT

See "CANCEL SW" in DATA MONITOR mode.

"CANCEL SW" should change from "OFF" to "ON" when pushing cancel switch.

OR

ON-BOARD

Check cancel switch operation in Switch monitor (Mode II) mode. (Refer to On-board Diagnoses EL-82.)

NG →

D

1) Disconnect ADP steering switch connector.
2) Check continuity.

Terminals	Continuity
㉜ - ①	Yes

NG → Repair harness.

↓ OK

E

1) Connect ADP steering switch connector.
2) Check voltage with cancel switch "ON".

Terminals	Voltage
㉜ - Ground	0V

NG → Replace ADP steering switch.

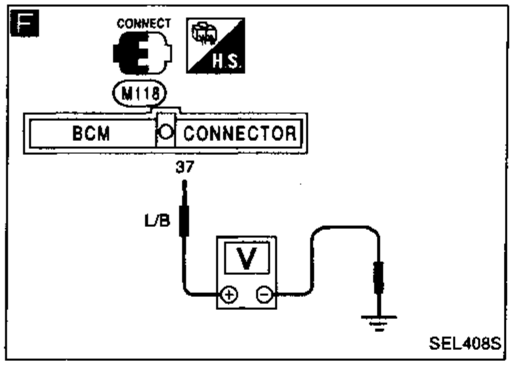
OK → Check cancel switch circuit and LAN communication again.

↓ OK

Ⓐ

(Go to next page.)

Trouble Diagnoses (Cont'd)



SEL408S

Ⓐ

CHECK DETENTION SWITCH SIGNAL.

A CONSULT

See "DETENT SW" in DATA MONITOR mode.

"DETENT SW" should be "OFF" when setting A/T selector lever in "P" position.

OR

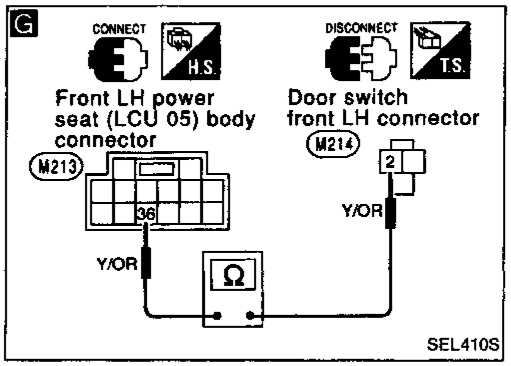
F TESTER

1) Set A/T selector lever in "P" position.
2) Check voltage.

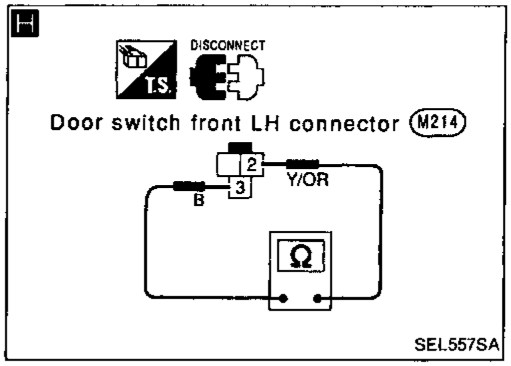
Terminals	Voltage
㊲ - GND	About 12V → 0V

NG → Check detention switch circuit. (Refer to DIAGNOSTIC PROCEDURE 1.)

OK



SEL410S



SEL557SA

CHECK DRIVER DOOR SWITCH SIGNAL.

A CONSULT

See "DOOR SW DR" in DATA MONITOR mode.

Driver's door	"DOOR SW DR"
Open	"ON"
Closed	"OFF"

OR

ON-BOARD

Check driver's door switch operation in Switch monitor (Mode II) mode.
(Refer to On-board Diagnoses EL-82.)

NG → **G**

1) Disconnect door switch front LH connector.
2) Check continuity.

Terminals	Continuity
㊱ - ②	Yes

NG → Repair harness.

OK → **H**

Check continuity with door open.

NG → Replace door switch.

OK → Check LAN communication again.

OK

Ⓑ

(Go to next page.)

Trouble Diagnoses (Cont'd)

Ⓑ

CHECK SET SWITCH, MEMORY SWITCH 1 AND MEMORY SWITCH 2.

A CONSULT

See "SET SW", "MEMORY SW 1" and "MEMORY SW 2" in DATA MONITOR mode.

"SET SW", "MEMORY SW 1" and "MEMORY SW 2" should change from "OFF" to "ON" when pushing each switch.

OR

ON-BOARD

Check set switch, memory switch 1 and memory switch 2 operation in Switch monitor (Mode II) mode.
(Refer to On-board Diagnoses EL-82.)

NG → Check LAN communication again. If LCU 01-A is incorrected, it must be replaced.

OK ↓

CHECK VEHICLE SPEED SENSOR CIRCUIT.

A CONSULT

See "VHCL SPEED SE" in DATA MONITOR mode.

When vehicle is stopped, "UNDER 7 km" should be shown under "VHCL SPEED SEN" on display.

OR

ON-BOARD

Check vehicle speed sensor circuit in Automatic drive positioner operation (Mode V) mode.
(Refer to On-board Diagnoses EL-88)

OK → Check LAN communication again.

NG ↓

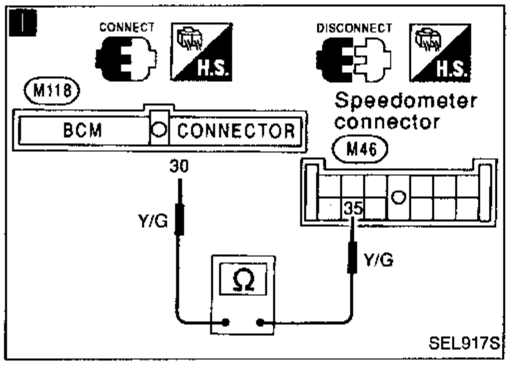
I

1) Disconnect speedometer connector.
2) Check harness continuity between BCM connector terminal ㉚ and speedometer connector terminal ㉟.
Continuity should exist.

NG → Repair harness.

OK ↓

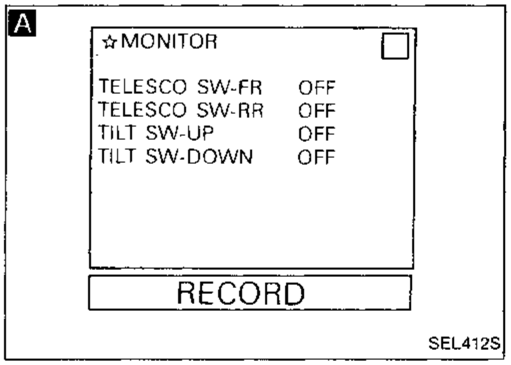
Repair vehicle speed sensor circuit.



Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

SYMPTOM: Steering column does not tilt and telescope forward or backward manually.



☆MONITOR ☐

TELESCO SW-FR OFF
TELESCO SW-RR OFF
TILT SW-UP OFF
TILT SW-DOWN OFF

RECORD

SEL412S

CHECK TILT AND TELESCOPIC OPERATION OF ADP STEERING SWITCH.
CHECK TROUBLED SWITCHES.

A CONSULT

See "TILT SW-UP or DOWN", "TELESCO SW-FR or RR" in DATA MONITOR mode.
"TILT SW-UP or DOWN", "TELESCO SW-FR or RR" should change from "OFF" to "ON" when each switches are turned ON.

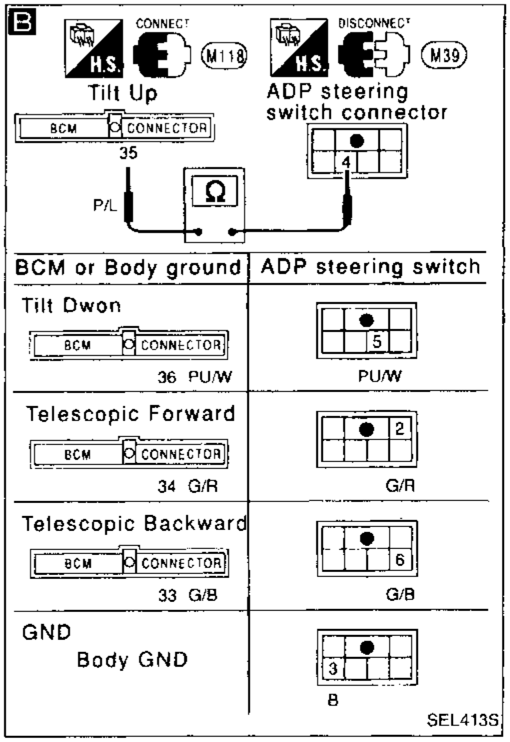
OR

ON-BOARD

Check tilt up or down, telescopic forward or backward switch operation in Switch monitor (Mode II) mode.
(Refer to On-board Diagnoses EL-82.)

OK → (Go to Ⓐ on next page.)

NG ↓



SEL413S

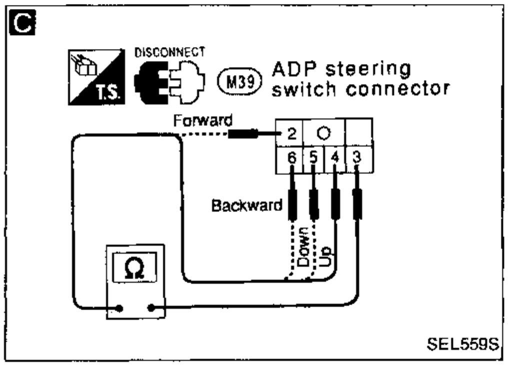
B

1) Disconnect ADP steering switch connector.
2) Check continuity in ground circuit and trouble circuit selected from those shown below.

Operation		Terminals	Continuity
Tilt	Up	㉟ - ④	Yes
	Down	㊱ - ⑤	
Telescopic	Forward	㉞ - ②	
	Backward	㉝ - ⑥	
Ground circuit		GND - ③	

NG → Repair harness.

OK ↓



SEL559S

C

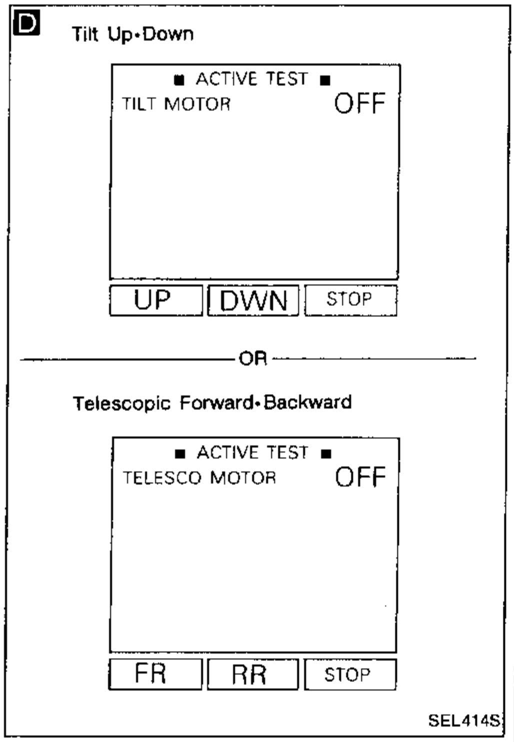
Check continuity in ground circuit and ADP steering operation terminals.
Continuity should exist.

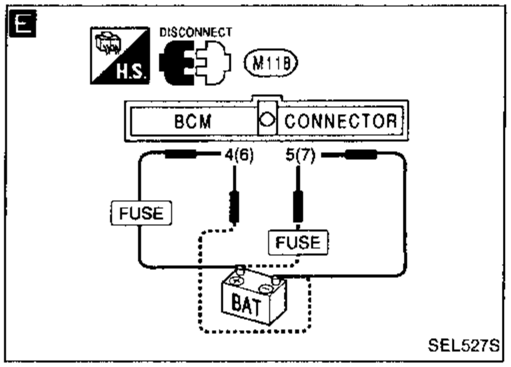
OK → Check ADP steering switch circuit and LAN communication again.

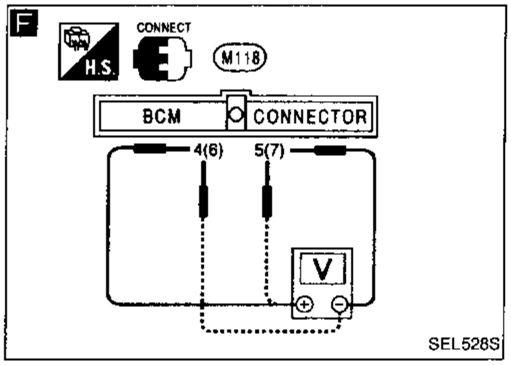
NG ↓

Replace ADP steering switch.

Trouble Diagnoses (Cont'd)







Ⓐ

CHECK TILT OR TELESCOPIC MOTOR.

D CONSULT

See "TILT MOTOR" or "TELESCO MOTOR" in ACTIVE TEST mode.
Perform operation shown on display. Motor should operate.

OR

E TESTER

1) Disconnect BCM connector.
2) Check motor for trouble.

Terminals (Color)		Operation
⊕	⊖	
④ (GY/R)	⑤ (P)	Tilt-up
⑤	④	Tilt-Down
⑥ (P/L)	⑦ (P/B)	Telescopic-Forward
⑦	⑥	Telescopic-Backward

OK

Ⓒ (Go to page after next.)

OK **F**

CHECK OPERATION VOLTAGE TO TILT OR TELESCOPIC MOTOR.

1) Connect BCM connector.
2) Disconnect tilt or telescopic motor connector (M52 or M36).
3) Check voltage when ADP steering switch is as follows:

Operation	Terminals ⊕ - ⊖	Voltage
Tilt-up	④ - ⑤	Battery voltage
Tilt-Down	⑤ - ④	
Telescopic Forward	⑥ - ⑦	
Telescopic Backward	⑦ - ⑥	

OK

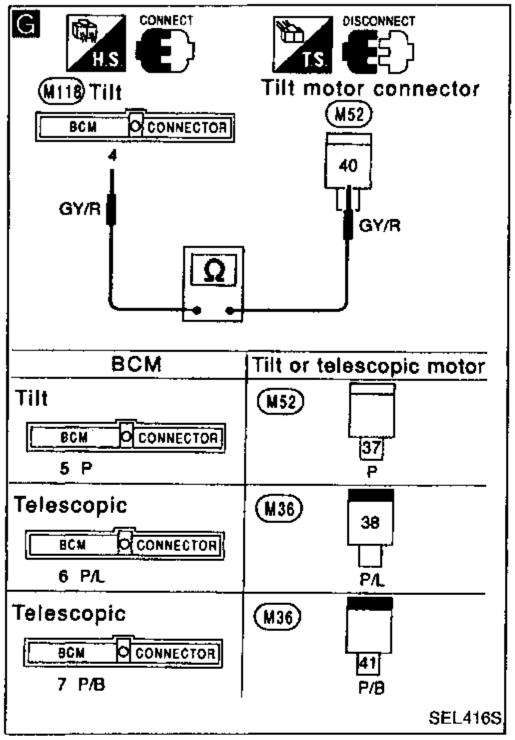
NG

Replace BCM.

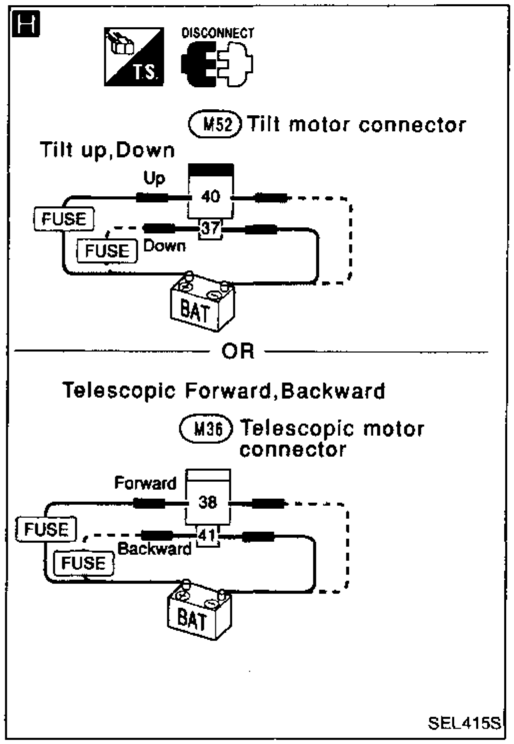
NG

Ⓑ
(Go to next page.)

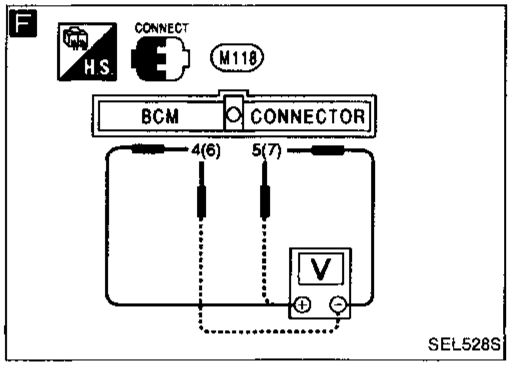
Trouble Diagnoses (Cont'd)



SEL416S



SEL415S



SEL528S

Ⓑ

G

Check continuity in troubled circuit.

	Terminals	Continuity
Tilt	④ - ㊵	Yes
	⑤ - ㊲	
Telescopic	⑥ - ㊳	
	⑦ - ㊶	
Tilt	④ - ⑤	No
Telescopic	⑥ - ⑦	

NG → Repair harness.

OK

H

1) Disconnect tilt or telescopic motor connector.
2) Check motor for trouble.

Terminals		Operation
⊕	⊖	
㊵	㊲	Tilt-up
㊲	㊵	Tilt-Down
㊳	㊶	Telescopic-Forward
㊶	㊳	Telescopic-Backward

NG → Replace tilt or telescopic motor.

OK

F

CHECK OPERATION VOLTAGE TO TILT OR TELESCOPIC SEN.
1) Connect BCM connector.
2) Disconnect tilt or telescopic motor connector (M52 or M36).
3) Check voltage when ADP steering switch is as follows:

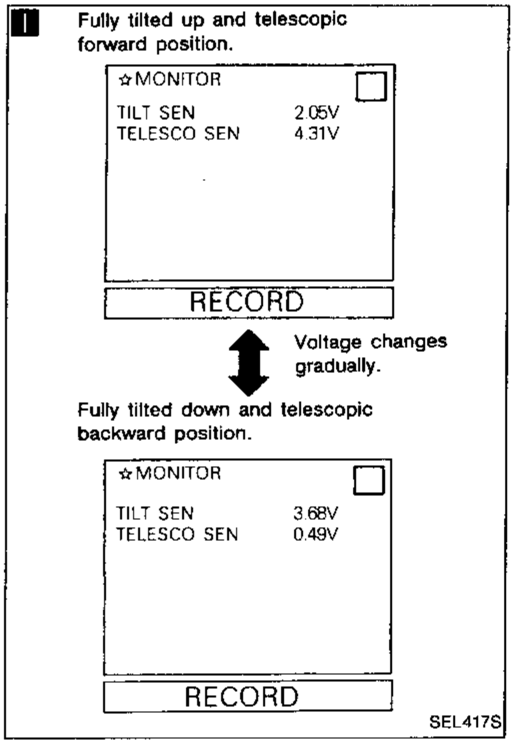
Operation	Terminals ⊕ - ⊖	Voltage
Tilt-Up	④ - ⑤	Battery voltage
Tilt-Down	⑤ - ④	
Telescopic Forward	⑥ - ⑦	
Telescopic Backward	⑦ - ⑥	

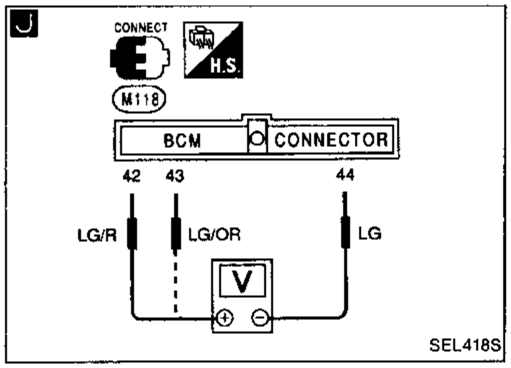
OK → Check tilt or telescopic motor again.

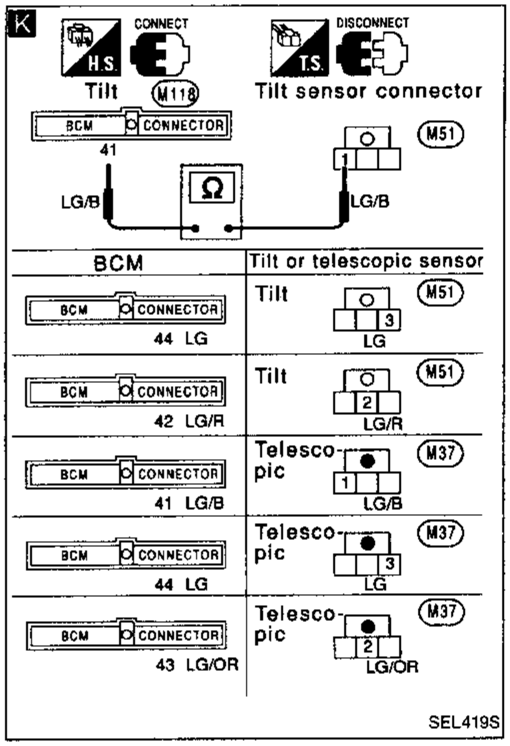
NG

Replace BCM.

Trouble Diagnoses (Cont'd)







Ⓒ

CHECK TILT OR TELESCOPIC SENSOR.

I CONSULT

See "TILT SEN" or "TELESCO SEN" in DATA MONITOR mode.

- **The more downward (tilt) or forward (telescopic) the position of the steering column, the more voltage displayed increases.**
- **The more upward (tilt) or backward (telescopic) the position of the steering column, the more voltage displayed decreases.**

OR

J TESTER

Operate applicable switch and conduct voltage test on its circuit.

	Terminals	Voltage
Tilt	㊷ - ㊹	Approximately 0.1 - 4.9V
Telescopic	㊸ - ㊹	

OK → Check LAN communication again.

NG

K

1) Disconnect tilt or telescopic sensor connector.
2) Check continuity in troubled circuit.

	Terminals	Continuity
Tilt	㊶ - ①	Yes
	㊹ - ③	
	㊷ - ②	
Telescopic	㊶ - ①	
	㊹ - ③	
	㊸ - ②	

NG → Repair harness.

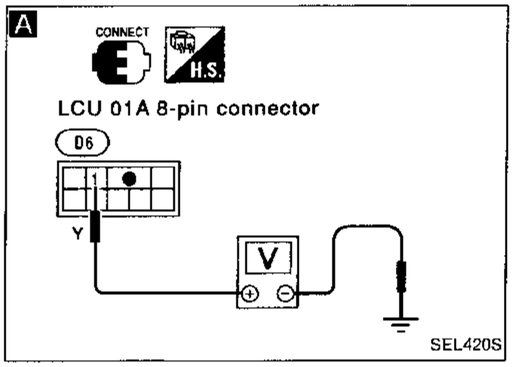
OK

Replace tilt or telescopic sensor.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

SYMPTOM: None of the seats operate manually.



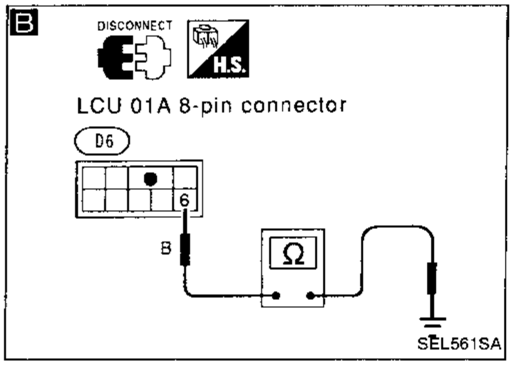
A

CHECK BATTERY VOLTAGE AND GROUND OF POWER SEAT FRONT LH SWITCH.
Check voltage between LCU 01-A connector terminal ① and ground.

Terminals	Voltage
① - GND	Battery voltage

NG → Repair battery harness.

OK ↓



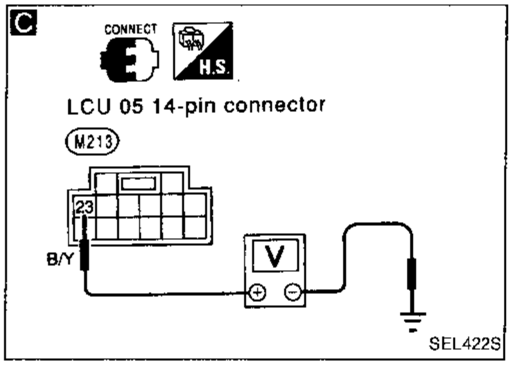
B

1) Disconnect LCU 01-A 8-pin connector.
2) Check continuity between LCU 01-A connector terminal ⑥ and ground.

Terminals	Continuity
⑥ - GND	Yes

NG → Repair ground harness.

OK ↓



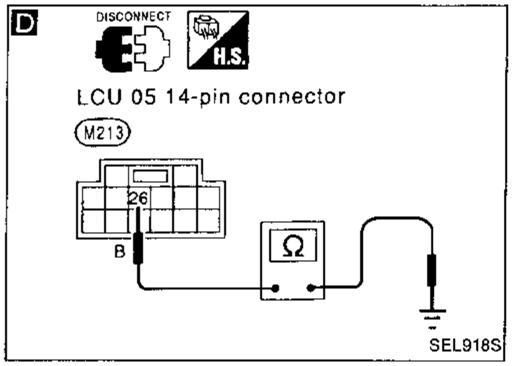
C

CHECK BATTERY VOLTAGE AND GROUND OF FRONT LH POWER SEAT CONTROL UNIT.
Check voltage between LCU 05 body connector terminal ㉓ and ground.

Terminals	Voltage
㉓ - GND	Battery voltage

NG → Repair battery harness.

OK ↓



D

1) Disconnect LCU 05 8-pin body connector.
2) Check continuity between LCU 05 body connector's terminal ㉖ and ground.

Terminals	Continuity
㉖ - GND	Yes

NG → Repair ground harness.

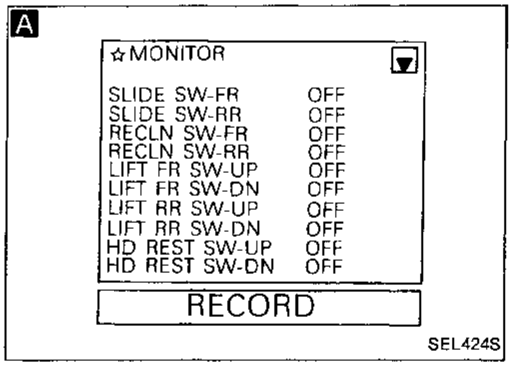
OK ↓

Go to DIAGNOSTIC PROCEDURE 5.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

SYMPTOM: One or more manual operations (sliding, reclining, front lifting, rear lifting and headrest height) are malfunctioning.



```
☆MONITOR

SLIDE SW-FR      OFF
SLIDE SW-RR      OFF
RECLN SW-FR      OFF
RECLN SW-RR      OFF
LIFT FR SW-UP    OFF
LIFT FR SW-DN    OFF
LIFT RR SW-UP    OFF
LIFT RR SW-DN    OFF
HD REST SW-UP    OFF
HD REST SW-DN    OFF
```

SEL424S

CHECK SEAT SLIDING, RECLINING, FRONT AND REAR LIFTING AND HEADREST SWITCH OPERATION.

A CONSULT

See "SLIDE SW, RECLN SW, LIFT FR or RR SW, HD REST SW" in DATA MONITOR mode.

These switches should change from "OFF" to "ON" when switch is operated.

OR

ON-BOARD

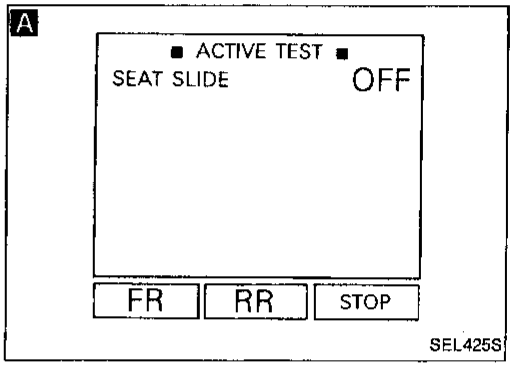
Check each switch operation in Switch monitor (Mode II) mode.
(Refer to On-board Diagnosis EL-82.)

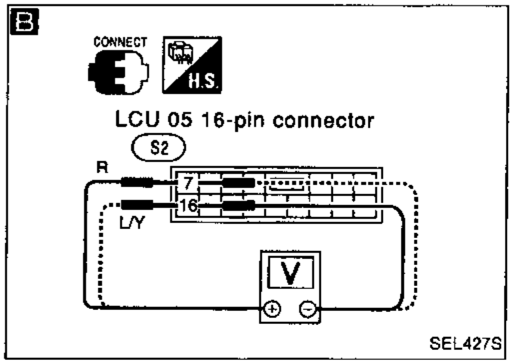
NG → Check "LAN Communication" again.

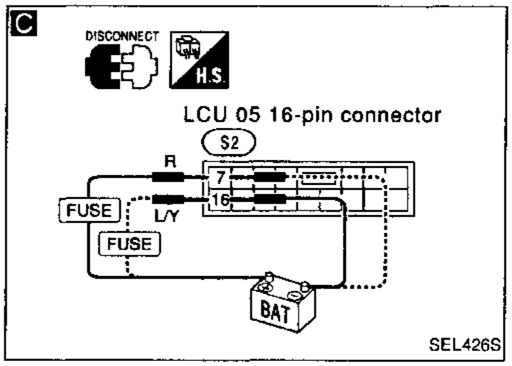
OK ↓

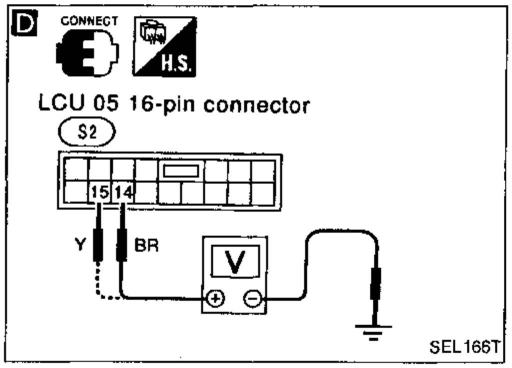
Go to DIAGNOSTIC PROCEDURE 6-1 to 6-5.

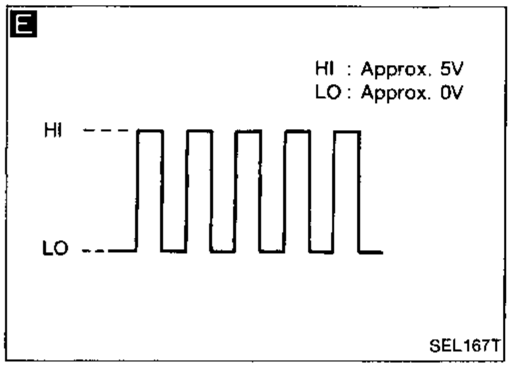
Trouble Diagnoses (Cont'd)











DIAGNOSTIC PROCEDURE 6-1

SYMPTOM: Seat slide does not operate manually.

A

CHECK SLIDING MOTOR CIRCUIT.
CONSULT
See "SEAT SLIDE" in ACTIVE TEST mode.
Perform operation shown on display.
Seat slide should operate.

OK → Go to Ⓐ below.

Note:
If CONSULT is not available, start with the diagnostic procedure **B** .

NG ↓

B Note

Check voltage between LCU05 16-pin connector terminals ⑦ and ⑯.

Sliding switch operation		Terminals ⊕ - ⊖	Voltage
Front	ON	⑦ - ⑯	Battery voltage
Rear	ON	⑯ - ⑦	

NG → Replace LCU05 (Driver's power seat C/U).

OK ↓

C

1) Disconnect LCU05 16-pin connector.
2) Check sliding device operation with battery voltage supplied to terminals.

⊕	⊖	Sliding device operation
⑦	⑯	Front
⑯	⑦	Rear

NG → Check continuity of sliding motor harness between LCU05 16-pin connector and motor connector S6.

- NG → Repair motor harness.
- OK → Check sliding motor operation again. If motor is malfunctioning, replace it.

OK ↓

D

CHECK SLIDING LIMIT SWITCH CIRCUIT.
1) Connect LCU05 16-pin connector.
2) Check voltage between LCU05 16-pin connector terminals ⑭, ⑮ and body ground.

Sliding switch operation		Terminals	Voltage
Sliding switch: Full-front position	ON	⑭	About 12V
		⑮	0V

NG → Check continuity of limit switch harness between LCU05 connector and limit switch connector S7.

- NG → Repair harness.
- OK → Replace limit switch.

OK ↓ Ⓐ ↓

E

CHECK SLIDING SENSOR CIRCUIT.
Measure voltage between LCU05 connector S4 terminal ㊲ (⊕) and ground (⊖) with oscilloscope when slide switch is operated.

NG → Check continuity of sensor harness.

- NG → Repair harness.
- OK → Replace slide sensor.

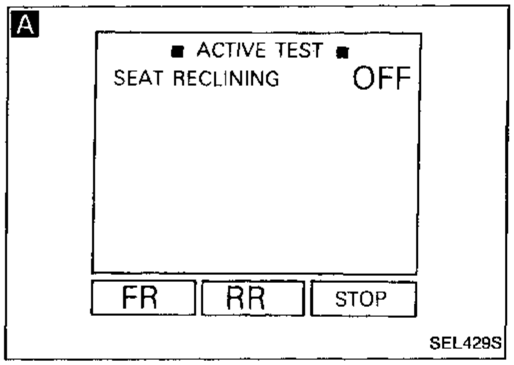
OK ↓

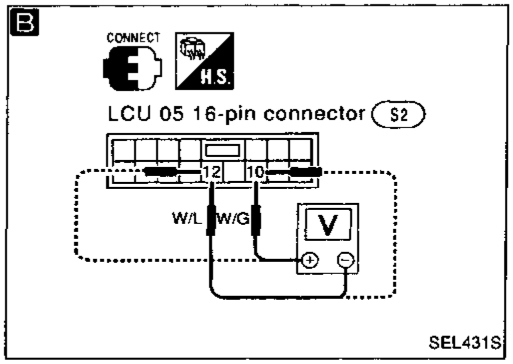
End (Check operation again.)

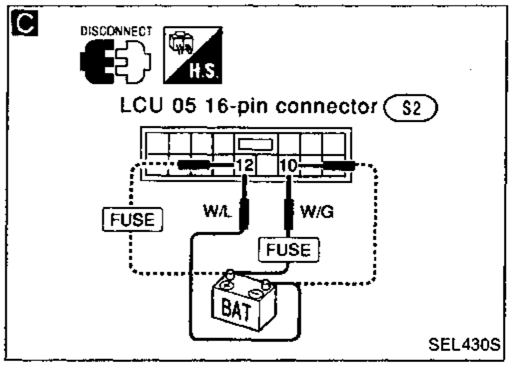
Trouble Diagnoses (Cont'd)

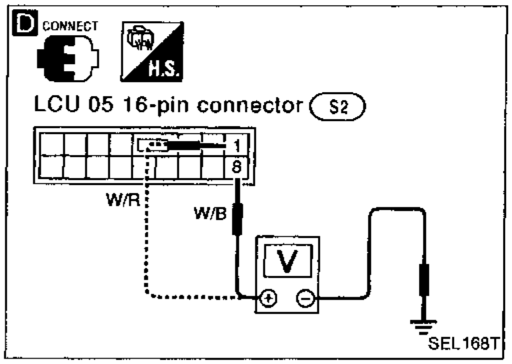
DIAGNOSTIC PROCEDURE 6-2

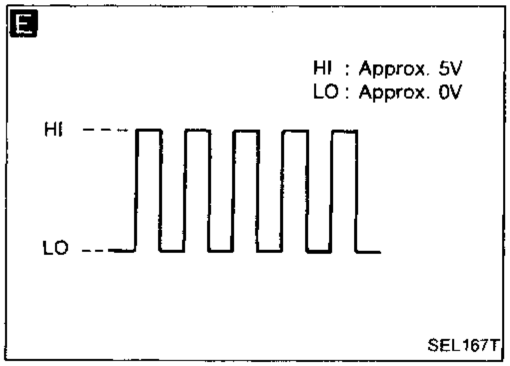
SYMPTOM: Seats do not recline manually.











A

CHECK RECLINING MOTOR CIRCUIT.
CONSULT
See "SEAT RECLINING" in ACTIVE TEST mode.
Perform operation shown on display.
Reclining motor should operate.

OK → Go to Ⓐ below.

Note:
If CONSULT is not available, start with the diagnostic procedure **B**.

NG ↓

B Note

Check voltage between LCU05 16-pin connector terminals ⑩ and ⑫.

Reclining switch operation		Terminals ⊕ - ⊖	Voltage
Forward	ON	⑩ - ⑫	Battery voltage
Backward	ON	⑫ - ⑩	

NG → Replace LCU05 (Driver's power seat C/U).

OK ↓

C

1) Disconnect LCU05 16-pin connector.
2) Check reclining device operation with battery voltage supplied to terminals.

⊕	⊖	Reclining device operation
⑩	⑫	Forward
⑫	⑩	Backward

NG → Check continuity of reclining motor harness between LCU05 16-pin connector and motor connector (S8).

- NG → Repair motor harness.
- OK → Check reclining motor operation again. If motor is malfunctioning, replace it.

OK ↓

D

CHECK RECLINING LIMIT SWITCH CIRCUIT.
1) Connect LCU05 16-pin connector.
2) Check voltage between LCU05 16-pin connector terminals ⑧, ① and body ground.

Reclining switch operation		Terminals	Voltage
Reclining switch: Max. forward tilt position	ON	⑧	About 12V
		①	0V

NG → Check continuity of limit switch harness between LCU05 connector and limit switch connector (S8).

- NG → Repair harness.
- OK → Replace limit switch.

OK ↓ Ⓐ ↓

E

CHECK RECLINING SENSOR CIRCUIT.
Measure voltage between LCU05 connector (S4) terminal ㊳ (⊕) and ground (⊖) with oscilloscope when reclining switch is operated.

NG → Check continuity of sensor harness.

- NG → Repair harness.
- OK → Replace reclining sensor.

OK ↓

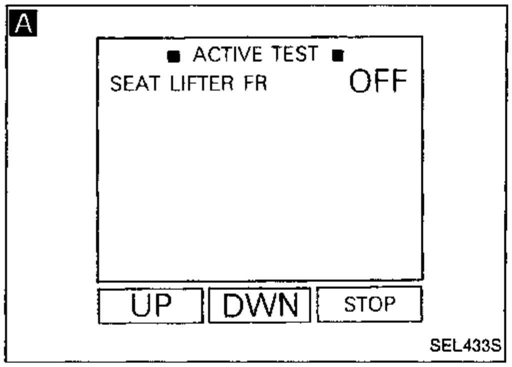
End (Check operation again.)

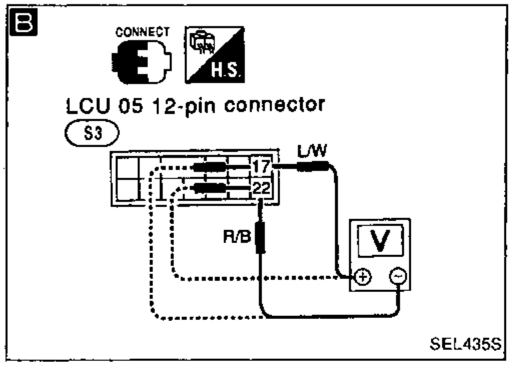
GI
MA
EM
LC
EF &
EC
FE
AT
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

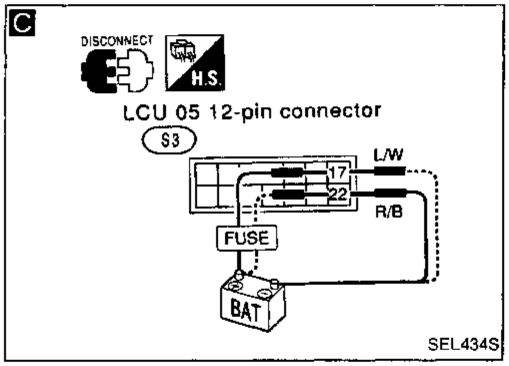
Trouble Diagnoses (Cont'd)

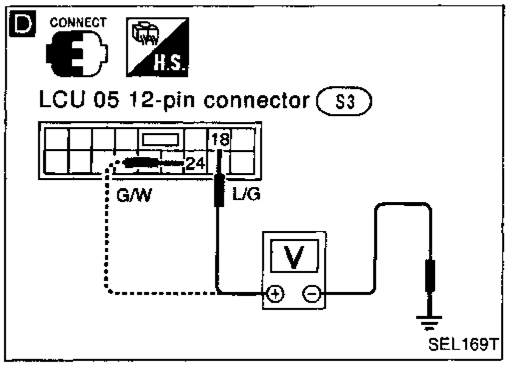
DIAGNOSTIC PROCEDURE 6-3

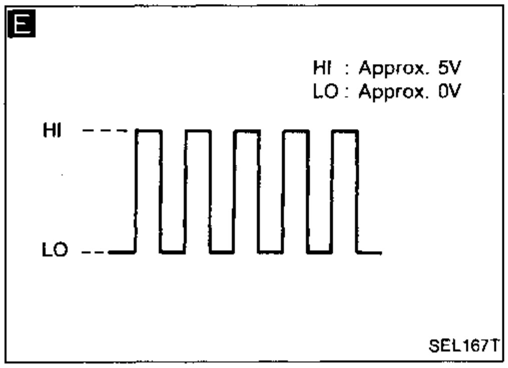
SYMPTOM: Seat front lifter does not operate manually.











A

CHECK FRONT LIFTING MOTOR CIRCUIT.

CONSULT

See "SEAT LIFTER FR" in ACTIVE TEST mode.

Perform operation shown on display.
Front lifter motor should operate.

OK → Go to Ⓐ below.

Note:
If CONSULT is not available, start with the diagnostic procedure **B** .

NG ↓

B Note

Check voltage between LCU05 12-pin connector terminals ⑰ and ㉒.

Front lifting switch operation		Terminals ⊕ - ⊖	Voltage
Upward	ON	⑰ - ㉒	Battery voltage
Downward	ON	㉒ - ⑰	

NG → Replace LCU05 (Driver's power seat C/U).

OK ↓

C

1) Disconnect LCU05 12-pin connector.
2) Check front lifting device operation with battery voltage supplied to terminals.

⊕	⊖	Front lifting device operation
⑰	㉒	Upward
㉒	⑰	Downward

NG → Check continuity of front lifting motor harness between LCU05 12-pin connector and motor connector (S9).

NG → Repair motor harness.

OK → Check front lifting motor operation again. If motor is malfunctioning, replace it.

OK ↓

D

CHECK FRONT LIFTING LIMIT SWITCH CIRCUIT.
1) Connect LCU05 12-pin connector.
2) Check voltage between LCU05 12-pin connector terminals ⑱, ㉔ and body ground.

Front lifting switch operation		Terminals	Voltage
Front lifting switch: Full-up position	ON	⑱	About 12V
		㉔	0V

NG → Check continuity of limit switch harness between LCU05 connector and limit switch connector (S9).

NG → Repair harness.

OK → Replace limit switch.

OK ↓ Ⓐ ↓

E

CHECK FRONT LIFTING SENSOR CIRCUIT.
Measure voltage between LCU05 connector (S4) terminal ㊽ (⊕) and ground (⊖) with oscilloscope when front lifting switch is operated.

OK → Check continuity of sensor harness.

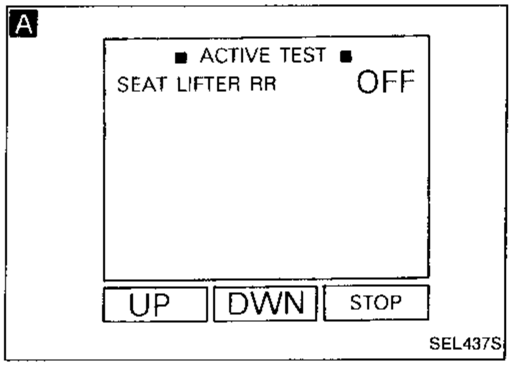
NG → Repair harness.

OK → Replace front lifting sensor.

OK ↓

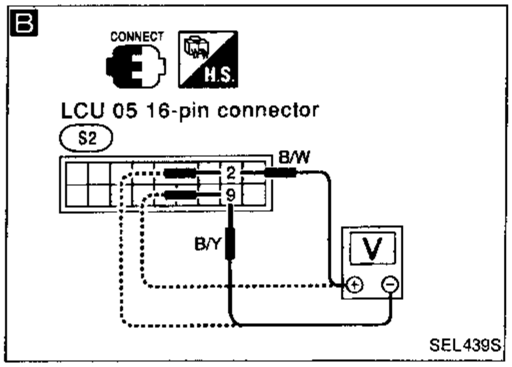
End (Check operation again.)

A

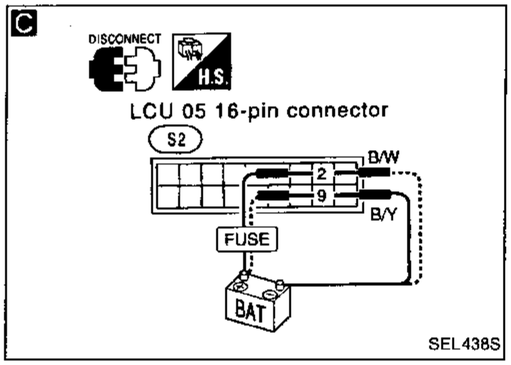

■ ACTIVE TEST ■

SEAT LIFTER RR OFF

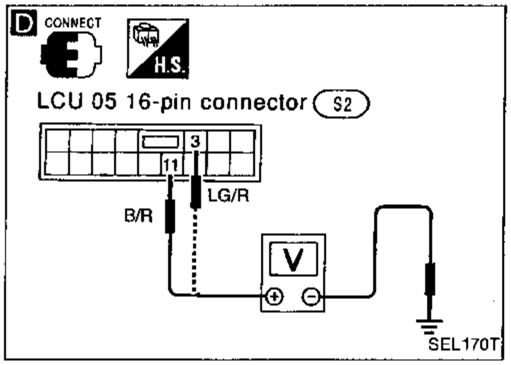
B



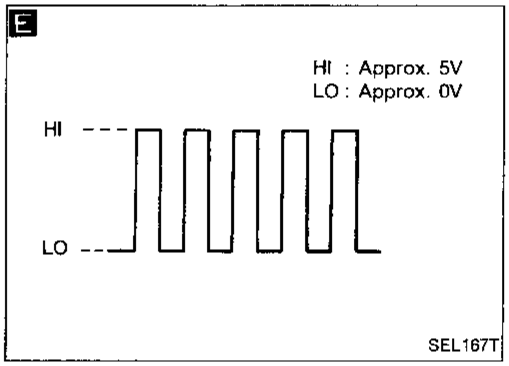
C



D



E



DIAGNOSTIC PROCEDURE 6-4

SYMPTOM: Seat rear lifter does not operate manually.

A

CHECK REAR LIFTING MOTOR CIRCUIT.
CONSULT
See "SEAT LIFTER RR" in ACTIVE TEST mode.
Perform operation shown on display.
Seat rear lifter should operate.

OK → Go to Ⓐ below.

Note:
If CONSULT is not available, start with the diagnostic procedure **B** .

↓ NG

B Note

Check voltage between LCU05 16-pin connector terminals ② and ⑨.

Rear lifting switch operation		Terminals ⊕ - ⊖	Voltage
Upward	ON	② - ⑨	Battery voltage
Downward	ON	⑨ - ②	

NG → Replace LCU05 (Driver's power seat C/U).

↓ OK

C

1) Disconnect LCU05 16-pin connector.
2) Check rear lifting device operation with battery voltage supplied to terminals.

⊕	⊖	Rear lifting device operation
②	⑨	Upward
⑨	②	Downward

NG → Check continuity of rear lifting motor harness between LCU05 16-pin connector and motor connector (S10).
- NG → Repair motor harness.
- ↓ OK → Check rear lifting motor operation again. If motor is malfunctioning, replace it.

↓ OK

D

CHECK REAR LIFTING LIMIT SWITCH.
1) Connect LCU05 16-pin connector.
2) Check voltage between LCU05 16-pin connector terminals ⑪, ③ and body ground.

Rear lifting switch operation		Terminals	Voltage
Rear lifting switch: Full-up position	ON	⑪	About 12V
		③	0V

NG → Check continuity of limit switch harness between LCU05 connector and limit switch connector (S10).
- NG → Repair harness.
- OK → Replace limit switch.

↓ OK Ⓐ

E

CHECK REAR LIFTING SENSOR CIRCUIT.
Measure voltage between LCU05 connector (S4) terminal ㊼ (⊕) and ground (⊖) with oscilloscope when front lifting switch is operated.

NG → Check continuity of sensor harness.
- NG → Repair harness.
- OK → Replace rear lifting sensor.

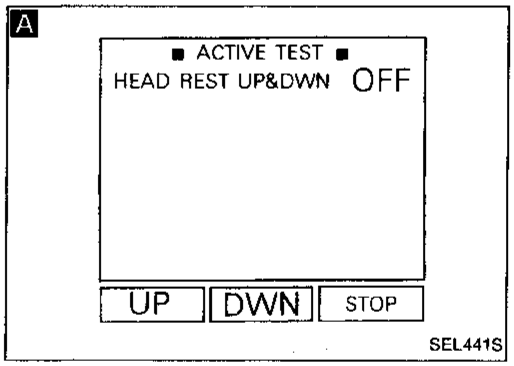
↓ OK

End (Check operation again.)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6-5

SYMPTOM: Headrest does not operate manually.



■ ACTIVE TEST ■

HEAD REST UP&DWN OFF

UP | DWN | STOP

SEL441S

A

CHECK HEADREST MOTOR CIRCUIT.

CONSULT

See "HEAD REST UP & DWN" in ACTIVE TEST mode.

Perform operation shown on display.

Headrest should move up and down.

OK → Go to Ⓐ below.

Note:
If CONSULT is not available, start with the diagnostic procedure **B**.

NG ↓

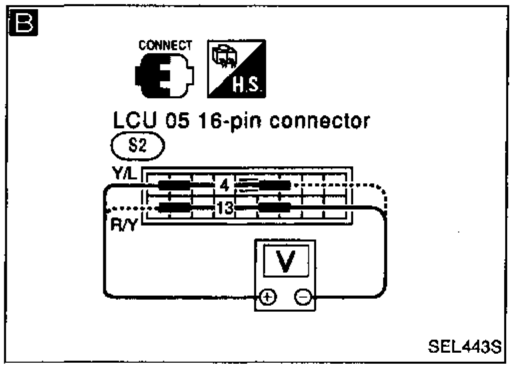
B Note

Check voltage between LCU05 16-pin connector terminals ④ and ⑬.

Headrest switch operation		Terminals ⊕ - ⊖	Voltage
Up	ON	④ - ⑬	Battery voltage
Down	ON	⑬ - ④	

NG → Replace LCU05 (Driver's power seat C/U).

OK ↓



SEL443S

C

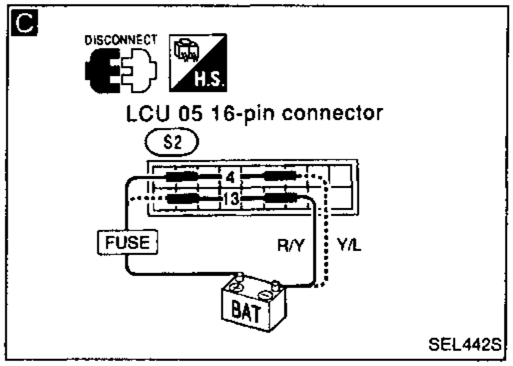
1) Disconnect LCU05 16-pin connector.
2) Check headrest device operation with battery voltage supplied to terminals.

⊕	⊖	Headrest device operation
④	⑬	Up
⑬	④	Down

NG → Check continuity of headrest motor harness between LCU05 16-pin connector and motor connector S11.

- NG → Repair motor harness.
- OK → Check headrest motor operation again. If motor is malfunctioning, replace it.

OK ↓



SEL442S

D

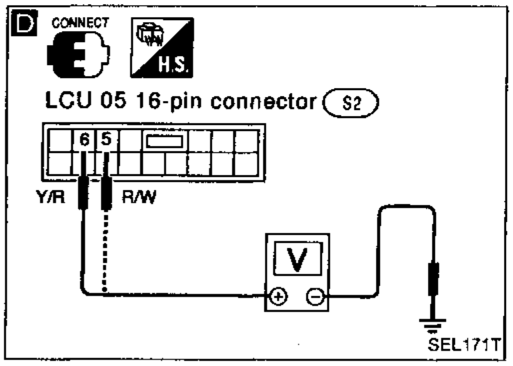
CHECK HEADREST LIMIT SWITCH.
1) Connect LCU05 16-pin connector.
2) Check voltage between LCU05 16-pin connector terminals ⑥, ⑤ and body ground.

Headrest switch operation		Terminals	Voltage
Headrest: Full-up position	ON	⑥	About 12V
		⑤	0V

NG → Check continuity of limit switch harness between LCU05 connector and limit switch connector S10.

- NG → Repair harness.
- OK → Replace limit switch.

OK ↓



SEL171T

Ⓐ ↓

E

CHECK HEADREST SENSOR CIRCUIT.

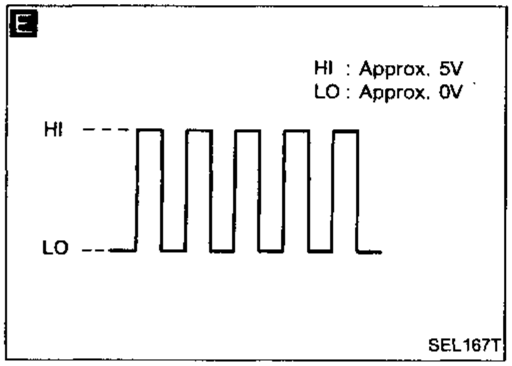
Measure voltage between LCU05 connector S4 terminal ㊹ (⊕) and ground (⊖) with oscilloscope when headrest switch is operated.

NG → Check continuity of sensor harness.

- NG → Repair harness.
- OK → Replace headrest sensor.

OK ↓

End (Check operation again.)



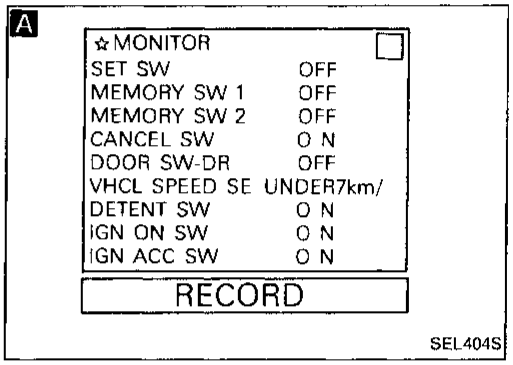
HI : Approx. 5V
LO : Approx. 0V

SEL167T

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7

SYMPTOM: Door mirror does not set automatically.



A

☆MONITOR	☐
SET SW	OFF
MEMORY SW 1	OFF
MEMORY SW 2	OFF
CANCEL SW	ON
DOOR SW-DR	OFF
VHCL SPEED SE	UNDER7km/
DETENT SW	ON
IGN ON SW	ON
IGN ACC SW	ON

RECORD

SEL404S

A CHECK ACC SWITCH ON SIGNAL.

CONSULT

See "IGN ACC SW" in DATA MONITOR mode.

"IGN ACC SW" should be "ON".

OR

B TESTER

Check voltage between BCM connector terminal ㊳ and ground while ignition switch is "ACC".

Terminals	Voltage
㊳ - GND	Battery voltage

NG → CHECK THE FOLLOWING.
- Fuse
- Harness continuity between BCM connector terminal ㊳ and fuse.

OK ↓

C Check voltage between door mirror control unit terminal ① and ⑤ while ignition switch is "ACC" or "ON".

Terminals	Voltage
⊕ - ⊖	Battery voltage
① - ⑤	

NG → Repair harness of battery or ground.

OK ↓

D CHECK DOOR MIRROR ACTUATOR.

See "MIRROR MOTOR LH" or "MIRROR MOTOR RH" in ACTIVE TEST mode.

Perform operation shown on display.
Door mirror actuator should operate.

NG → Check door mirror actuator circuit. (Refer to DOOR MIRROR — LAN EL-152.)

OK ↓

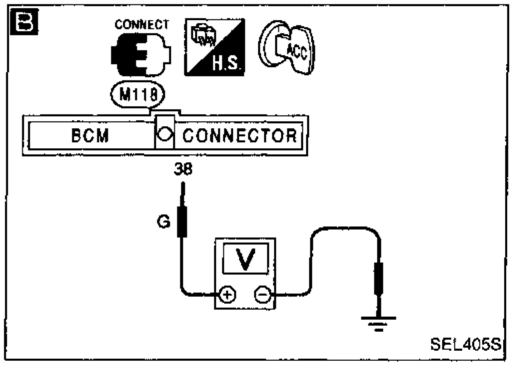
E CHECK DOOR MIRROR SENSOR.

See "MIR/SE RH or LH" frequency changed in DATA MONITOR mode when door mirror control switch is operated.

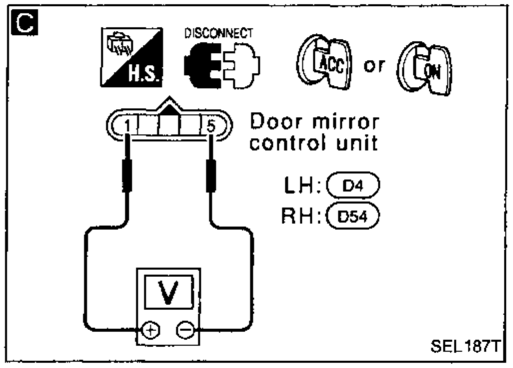
NG → Replace door mirror control unit and door mirror actuator.

OK ↓

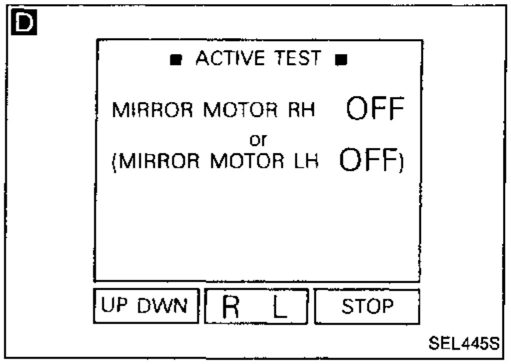
Check door mirror operation with automatic drive positioner and LAN Communication again.



SEL405S



SEL187T



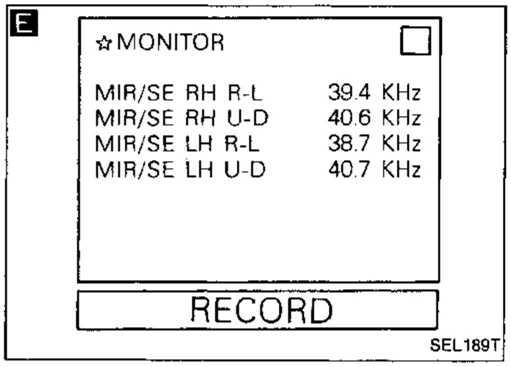
D

■ ACTIVE TEST ■

MIRROR MOTOR RH OFF
or
(MIRROR MOTOR LH OFF)

UP DWN | R L | STOP

SEL445S



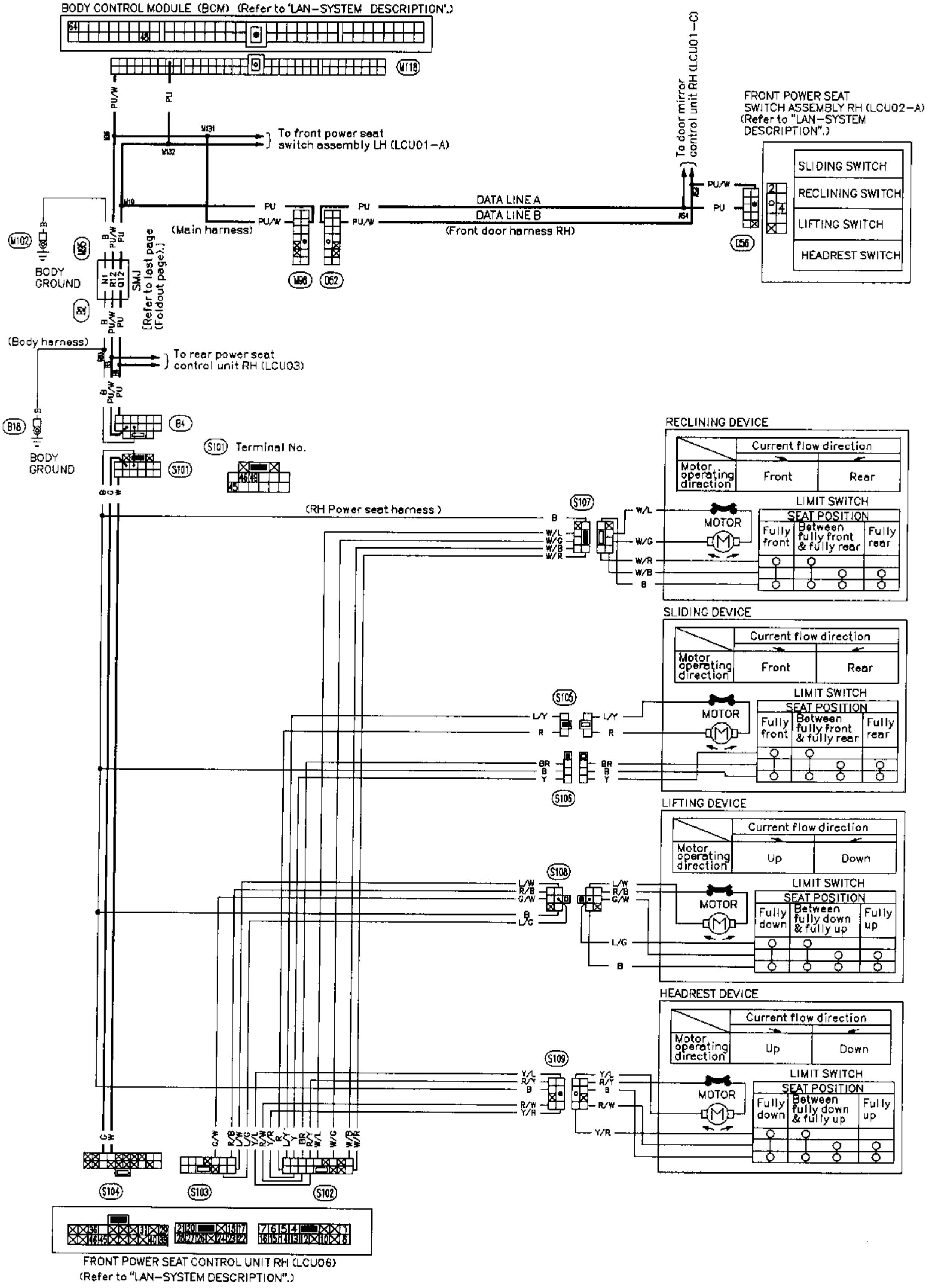
E

☆MONITOR	☐
MIR/SE RH R-L	39.4 KHz
MIR/SE RH U-D	40.6 KHz
MIR/SE LH R-L	38.7 KHz
MIR/SE LH U-D	40.7 KHz

RECORD

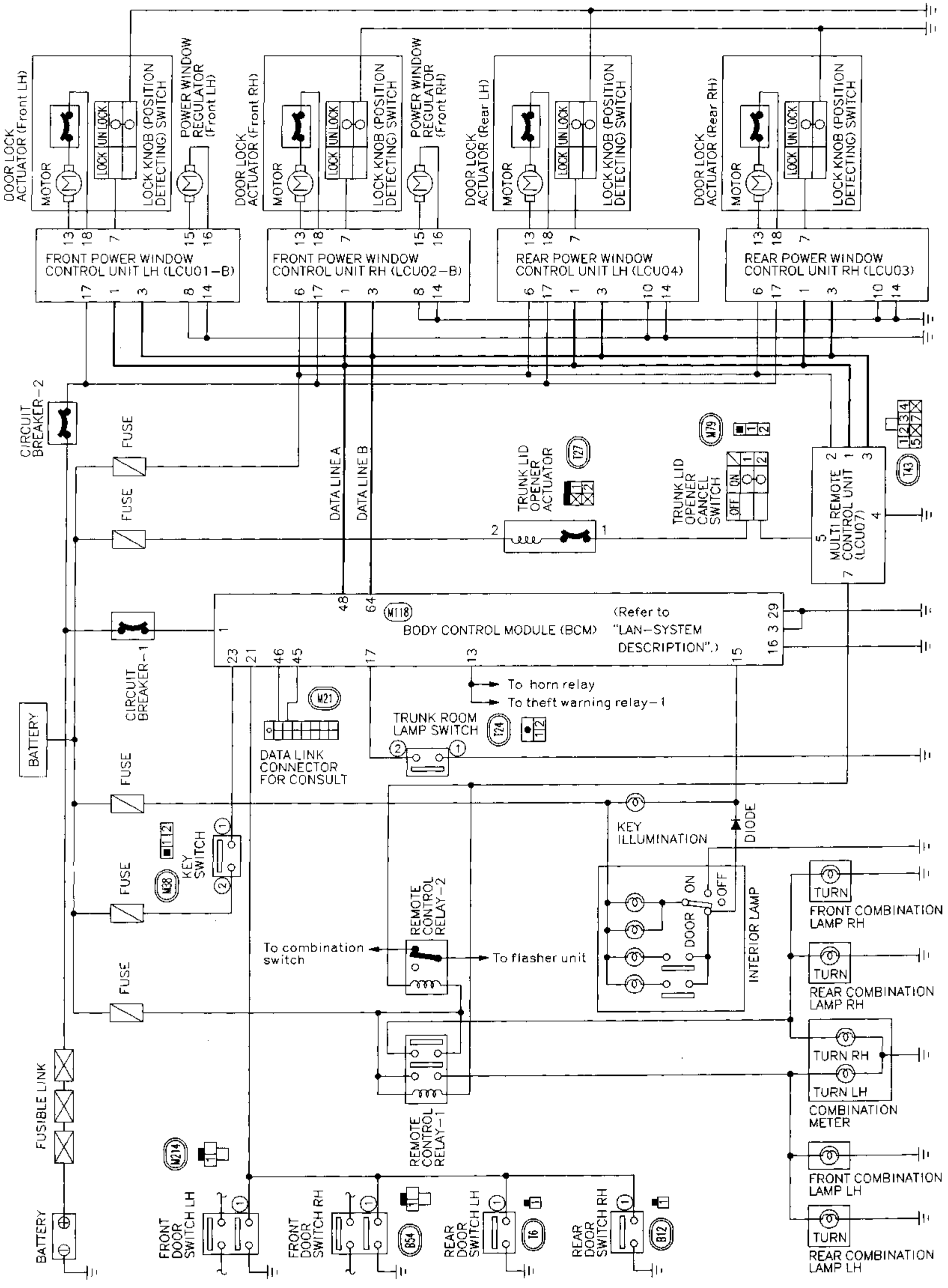
SEL189T

Wiring Diagram



MEL973D

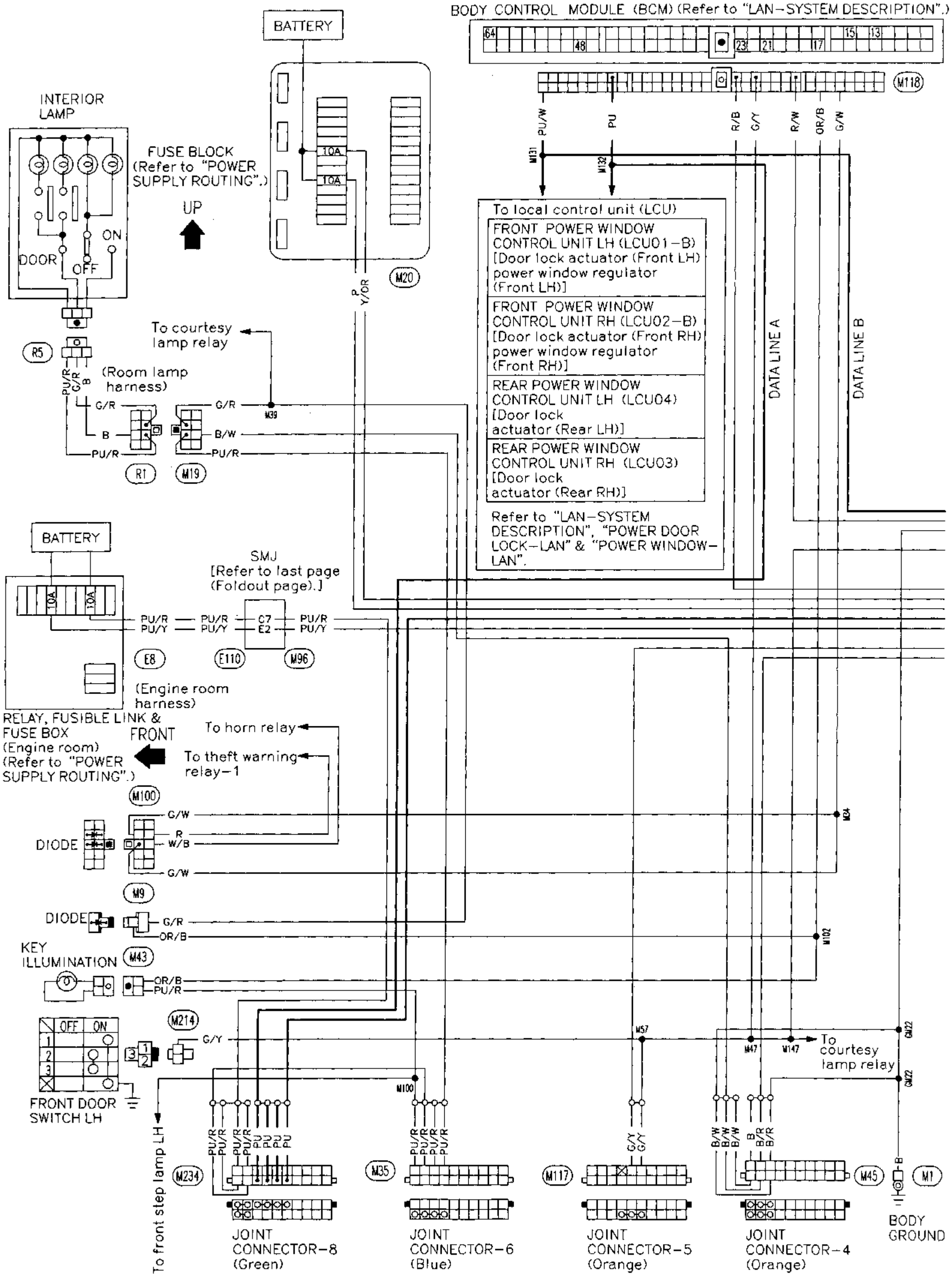
Schematic



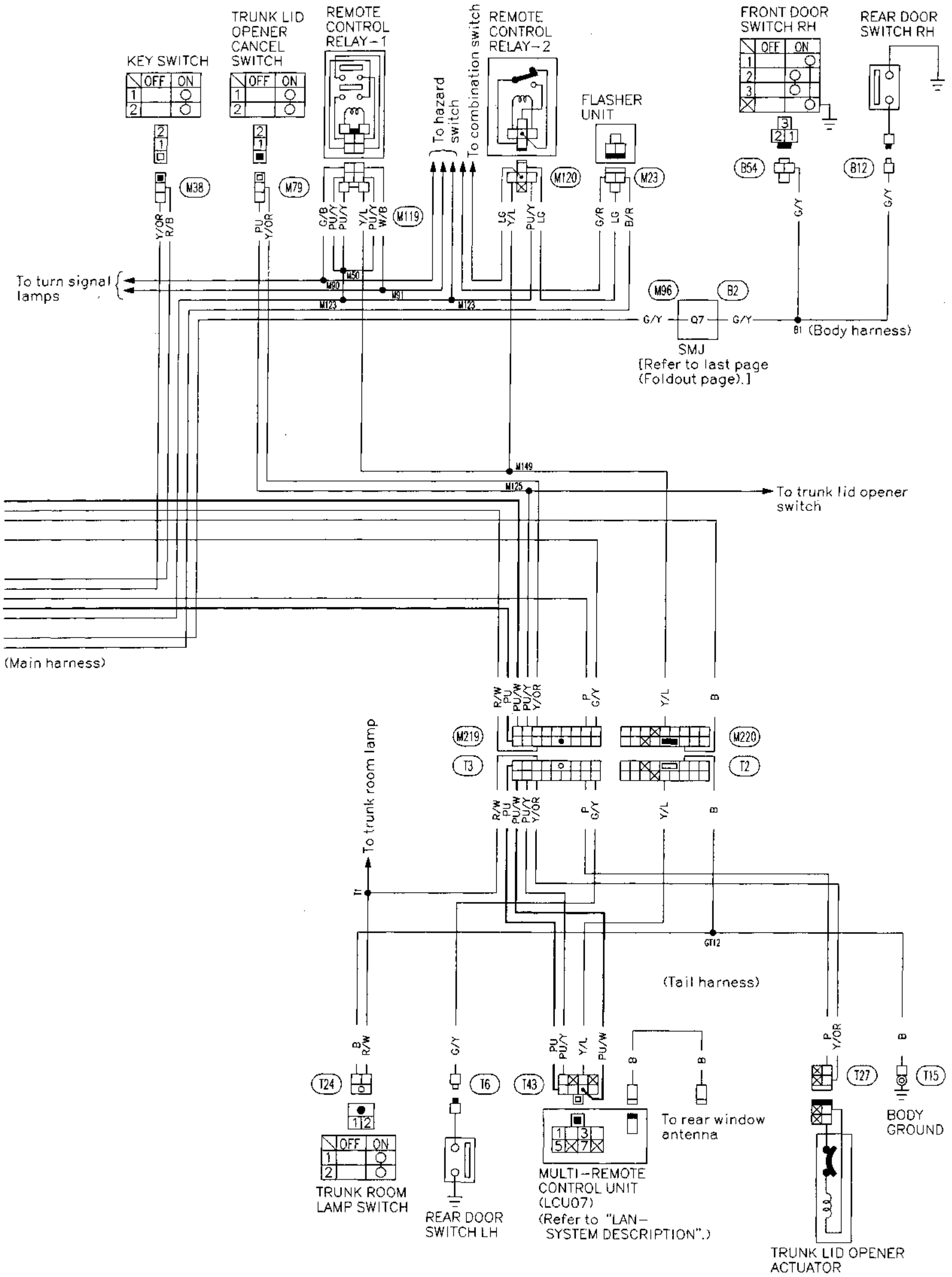
MEL816D

GI
MA
EM
LC
EF & EC
FE
AT
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

Wiring Diagram



Wiring Diagram (Cont'd)

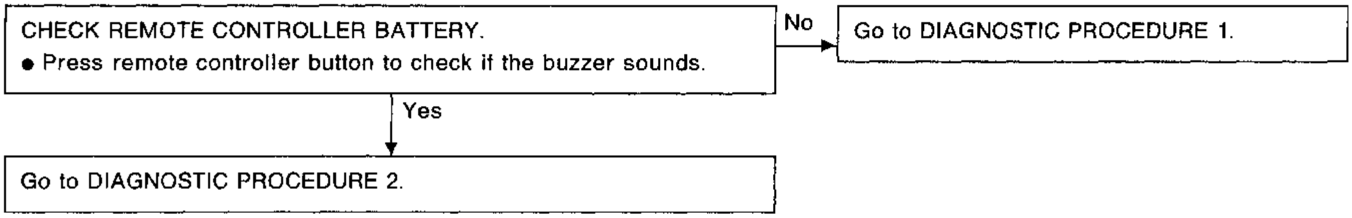


Trouble Diagnoses

TROUBLE SYMPTOM

Perform "LAN Communication Check" (refer to EL-100) before starting with the following items.

- No remote controls function.

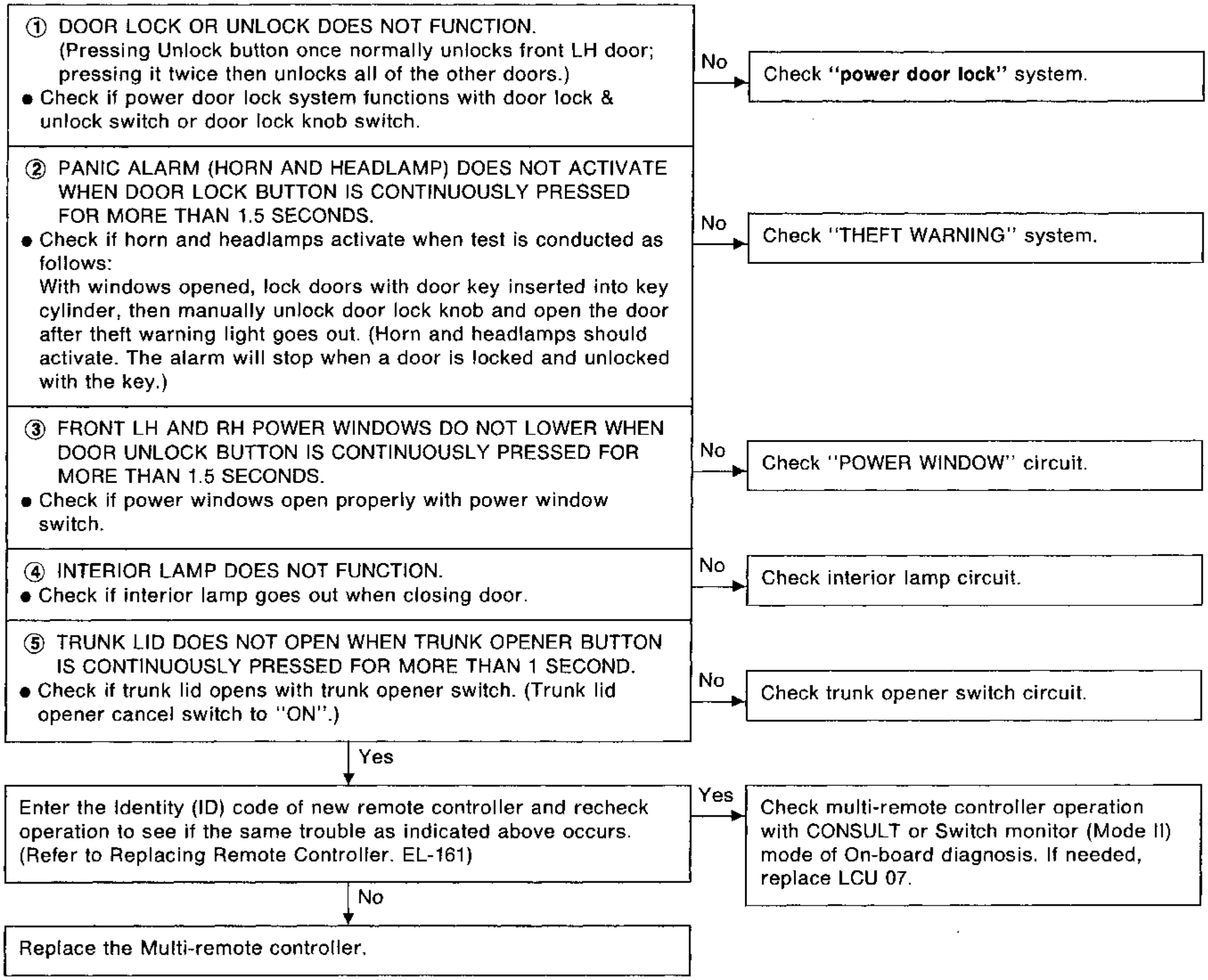


CHECK REMOTE CONTROLLER BATTERY.
- Press remote controller button to check if the buzzer sounds.

Go to DIAGNOSTIC PROCEDURE 1.

Go to DIAGNOSTIC PROCEDURE 2.

- Multi-remote controller does not operate a part of the functions.



① DOOR LOCK OR UNLOCK DOES NOT FUNCTION.
(Pressing Unlock button once normally unlocks front LH door; pressing it twice then unlocks all of the other doors.)
- Check if power door lock system functions with door lock & unlock switch or door lock knob switch.

Check **"power door lock"** system.

② PANIC ALARM (HORN AND HEADLAMP) DOES NOT ACTIVATE WHEN DOOR LOCK BUTTON IS CONTINUOUSLY PRESSED FOR MORE THAN 1.5 SECONDS.
- Check if horn and headlamps activate when test is conducted as follows:
With windows opened, lock doors with door key inserted into key cylinder, then manually unlock door lock knob and open the door after theft warning light goes out. (Horn and headlamps should activate. The alarm will stop when a door is locked and unlocked with the key.)

Check "THEFT WARNING" system.

③ FRONT LH AND RH POWER WINDOWS DO NOT LOWER WHEN DOOR UNLOCK BUTTON IS CONTINUOUSLY PRESSED FOR MORE THAN 1.5 SECONDS.
- Check if power windows open properly with power window switch.

Check "POWER WINDOW" circuit.

④ INTERIOR LAMP DOES NOT FUNCTION.
- Check if interior lamp goes out when closing door.

Check interior lamp circuit.

⑤ TRUNK LID DOES NOT OPEN WHEN TRUNK OPENER BUTTON IS CONTINUOUSLY PRESSED FOR MORE THAN 1 SECOND.
- Check if trunk lid opens with trunk opener switch. (Trunk lid opener cancel switch to "ON".)

Check trunk opener switch circuit.

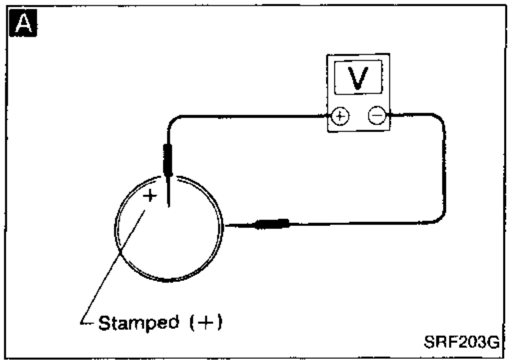
Enter the identity (ID) code of new remote controller and recheck operation to see if the same trouble as indicated above occurs. (Refer to Replacing Remote Controller. EL-161)

Check multi-remote controller operation with CONSULT or Switch monitor (Mode II) mode of On-board diagnosis. If needed, replace LCU 07.

Replace the Multi-remote controller.

Note: The multi-remote control system does not activate with the ignition key inserted in the ignition key cylinder.

Trouble Diagnoses (Cont'd)



DIAGNOSTIC PROCEDURE 1

SYMPTOM: Remote controller buzzer does not sound when the button is pressed.

A

CHECK REMOTE CONTROLLER BATTERY.
Remove battery and measure voltage across battery positive and ground terminals ⊕ and ⊖.

Measuring terminal		Standard value
⊕	⊖	
Battery positive terminal ⊕	Battery negative terminal ⊖	3V or more

NG → Replace battery.

↓ OK

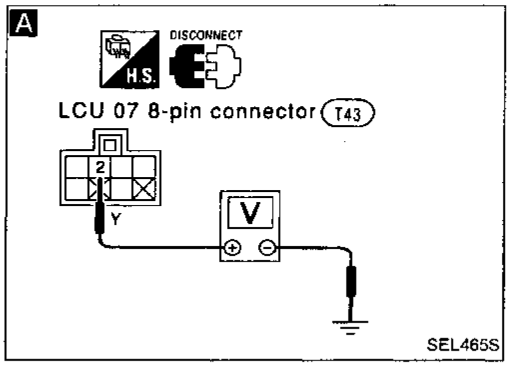
1) Push door lock button of remote controller before installing battery.
2) Reset battery in remote controller to make sure the buzzer sounds twice.

OK → Check system operation.

↓ NG

Replace controller.

Note:
Remote controller does not function if battery is not set correctly.



DIAGNOSTIC PROCEDURE 2

SYMPTOM: All remote controls do not function even if remote controller buzzer does sound.

A

CHECK MAIN POWER SUPPLY AND GROUND CIRCUIT TO MULTI-REMOTE CONTROL UNIT (LCU07).
1) Remove key from ignition.
2) Disconnect 8-pin connector from LCU07 and check voltage across remote control unit terminal ② and ground.
Battery voltage should exist.

NG → Check and repair power supply harness.

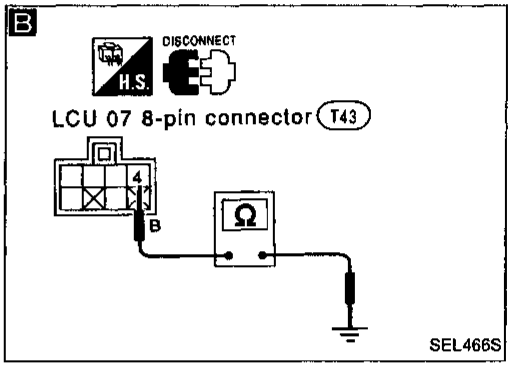
↓ OK

Ⓐ

GI
MA
EM
LC
EF & EC
FE
AT
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

Trouble Diagnoses (Cont'd)

Ⓐ

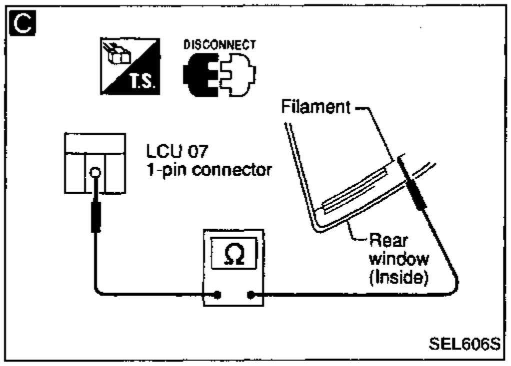


B

Check continuity between terminal ④ and ground.
Continuity should exist.

NG → Check and repair ground harness.

OK ↓



C

CHECK ANTENNA CIRCUIT.
Disconnect 1-pin connector from LCU07.
Check continuity between the terminal center and filament on the rear window.
Continuity should exist.

NG → Repair antenna circuit. (Refer to REAR WINDOW DEFOGGER "Filament Repair".)

OK ↓

CHECK IGNITION KEY SWITCH CIRCUIT.

D CONSULT

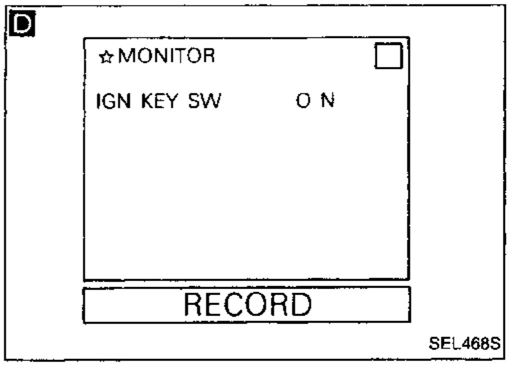
See "IGN KEY SW" in DATA MONITOR mode.
"IGN KEY SW" should be "ON" when IGN key is inserted in steering key cylinder.

— OR —

E TESTER

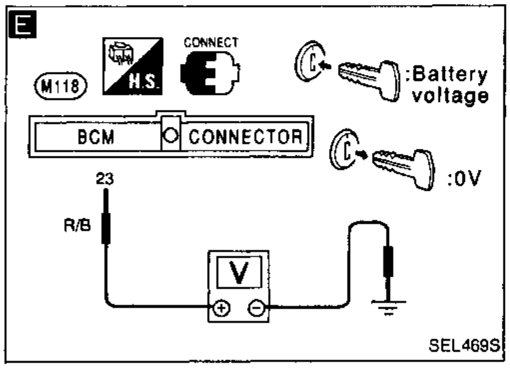
Check voltage when key is inserted in steering key cylinder.
Battery voltage should exist.

NG → Check and repair ignition key switch circuit.



☆MONITOR ☐
IGN KEY SW O N

RECORD



OK ↓

CHECK DOOR SWITCH CIRCUIT.

F CONSULT

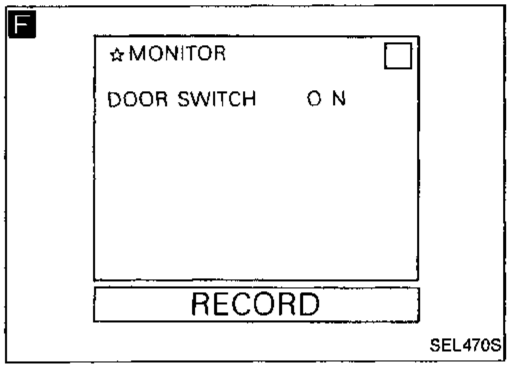
See "DOOR SWITCH" in DATA MONITOR mode.
If all doors are closed, "DOOR SWITCH" should be "OFF".

— OR —

ON-BOARD

Check all doors switches in Switch monitor (Mode II) mode.
(Refer to On-board Diagnoses EL-82.)

NG → Check and repair door switch circuit.



☆MONITOR ☐
DOOR SWITCH O N

RECORD

OK ↓

Check "WAKE-UP DIAGNOSIS" and LAN communication again.

Replacing Remote Controller or Multi-Remote Control Unit (LCU07)

Enter the identity (ID) code manually when:

- **remote controller or multi-remote control unit LCU07 is replaced.**
- **an additional remote controller is activated.**

ID Code Entry Procedure

To enter the ID code, follow this procedure.

"Setting mode".

(1) Open the trunk.
(2) Close and lock all doors.
(3) Insert and remove the key from the ignition more than six times within 10 seconds.

- **At this time, the original ID codes are eliminated.**

ID code entry:

(4) Unlock and lock the driver's door inside lock lever once.
(5) Push lock button on the new remote controller once (for example, if door is locked using the remote controller during this ID code entry enable state, a new ID code can be entered).

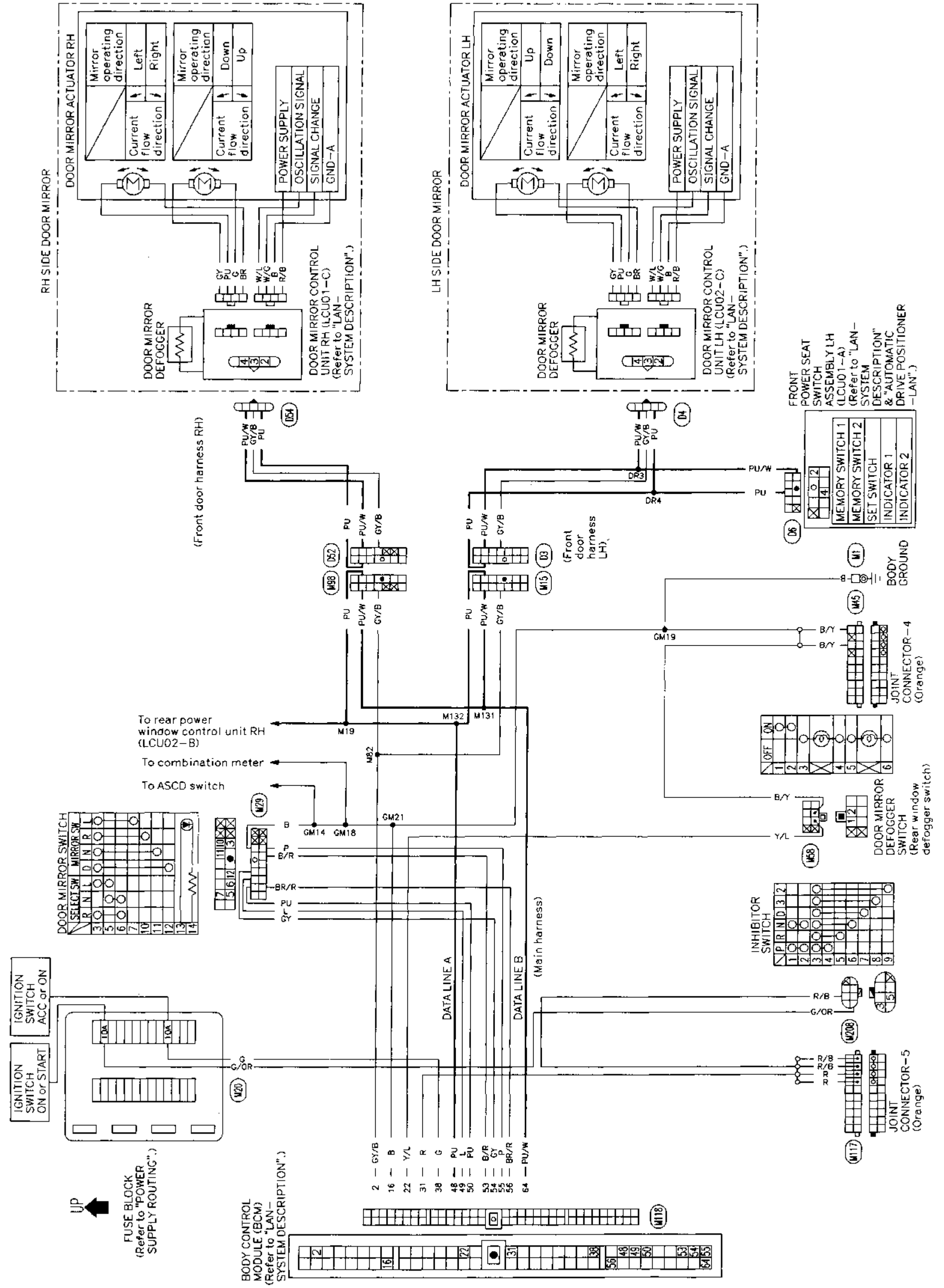
- **At this time, the new ID code is entered.**

(6) If you need to activate additional remote controllers (including the original) repeat the step (4) and (5) for each additional controller.
(7) This ID code entry enable state and setting mode remain until any one of the doors is opened.

Note

- **If the same ID code that exists in the memory is input, the entry will be ignored.**
- **Entry of maximum four ID codes is allowed and any attempt to enter more will be ignored.**
- **Any ID codes entered after termination of the "setting" mode will not be accepted. Additionally remote control signals will be inhibited when an ID code has not been entered during the "setting" mode.**

Wiring Diagram



MEL808D

Trouble Diagnoses

OPERATIVE CONDITION

Outside door mirrors are adjusted using the following three systems.

Manual Remote Control:

The power door mirror system consists of a Door Mirror Remote control switch, mounted on the lower left side of the instrument panel.
Two motors are included in each door mirror.
One motor controls the horizontal position of the power mirror, the other controls the vertical position of the power mirror.
To adjust the door mirror, make sure that the ignition key is "ACC", then operate the selector knob on the Remote Control switch as follows. Set the selector knob to the "L" position to adjust the driver side mirror or to the "R" position to adjust the passenger side mirror. Move the knob up, down, left, or right until the mirror is in the desired position.
Return the selector knob to the center position after setting.

Automatic Drive Positioner System:

This system adjusts the driver's seat position, tilt and telescopic adjustment of the steering wheel and the left and right door mirrors. (Refer to "AUTOMATIC DRIVE POSITIONER — LAN" EL-129.)

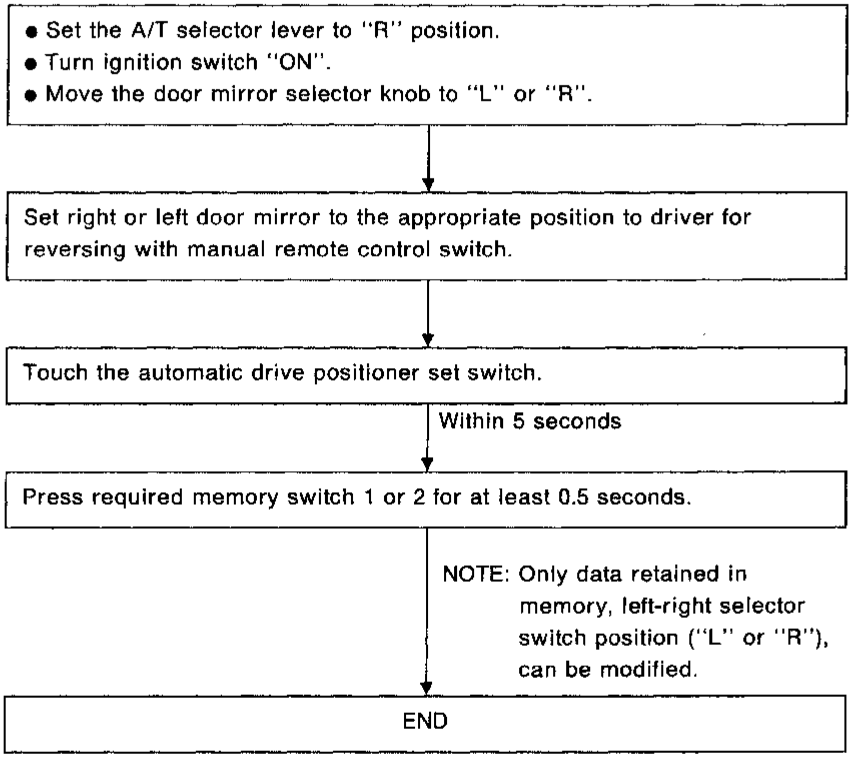
Outside Door Mirror Automatic Tilt Down Reverse System:

This system controls the door mirrors so that they face downward to assure rearward visibility while the vehicle is being backed up.
Door mirror is set to the appropriate position for reversing by moving the door mirror selector knob to "L" or "R" and A/T selector lever to "R" position when the ignition switch is ON.
Door mirrors are set to downward position already retained in memory using the automatic drive positioner memory switch 1 or 2. If door mirror positions are not retained in memory, move the door mirror selector knob to "L" or "R" position. This sets the corresponding door mirror from the current position to the standard downward position for reversing.

Note: In any of the following situations, the reverse system will be canceled and the door mirrors will not move even though the A/T selector lever is positioned to "R".
(a) Ignition switch is turned "OFF".
(b) Driver's door is opened.
(c) The vehicle speed is over 24 km/h (15 MPH)
In order to reset the reverse system, move the door mirror selector knob to "Neutral (Center)" once and then move it to "L" or "R" while not in any of the three situations (a, b, c) above.

Trouble Diagnoses (Cont'd)

- **Setting door mirror positions in memory (while backing up vehicle)**



- Set the A/T selector lever to "R" position.
- Turn ignition switch "ON".
- Move the door mirror selector knob to "L" or "R".

Set right or left door mirror to the appropriate position to driver for reversing with manual remote control switch.

Touch the automatic drive positioner set switch.

Within 5 seconds

Press required memory switch 1 or 2 for at least 0.5 seconds.

NOTE: Only data retained in memory, left-right selector switch position ("L" or "R"), can be modified.

END

TROUBLE SYMPTOM

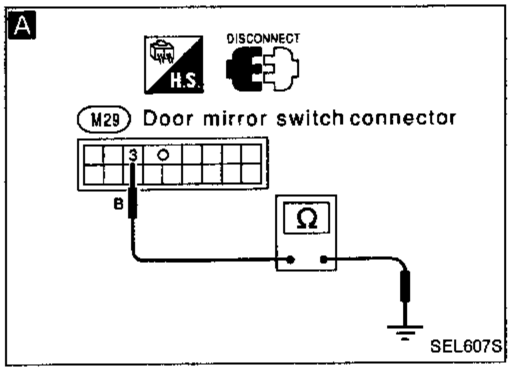
Perform "LAN Communication Check" (Refer to EL-100.) before starting with the following items.

- None of the outside door mirrors operate with the manual remote control switch. ——— DIAGNOSTIC PROCEDURE 1.
- Outside door mirror does not operate one or more of the controls with manual remote control switch. ——— DIAGNOSTIC PROCEDURE 2.
- Door mirror automatic tilt down reverse system does not operate. ——— DIAGNOSTIC PROCEDURE 3.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

SYMPTOM: None of the outside door mirrors operate with the manual remote control switch.



A

CHECK MIRROR SWITCH GROUND CIRCUIT.
Check harness continuity between door mirror switch connector terminal ③ and body ground.
Continuity should exist.

OK → Go to DIAGNOSTIC PROCEDURE 2.

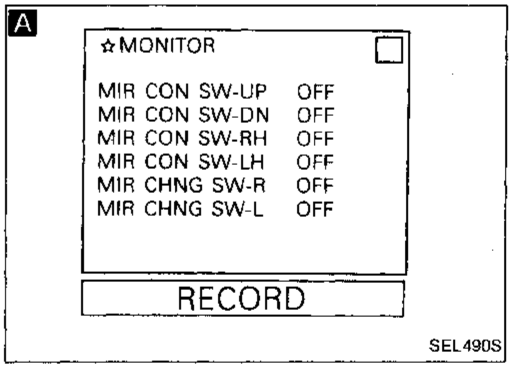
NG ↓

Repair harness.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

SYMPTOM: Outside door mirror does not operate one or more of the controls with manual remote control switch.



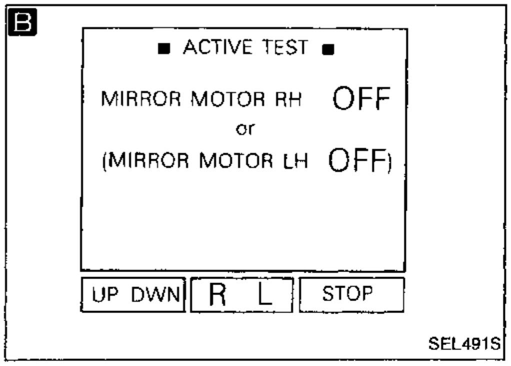
A

☆MONITOR ☐

MIR CON SW-UP OFF
MIR CON SW-DN OFF
MIR CON SW-RH OFF
MIR CON SW-LH OFF
MIR CHNG SW-R OFF
MIR CHNG SW-L OFF

RECORD

SEL490S



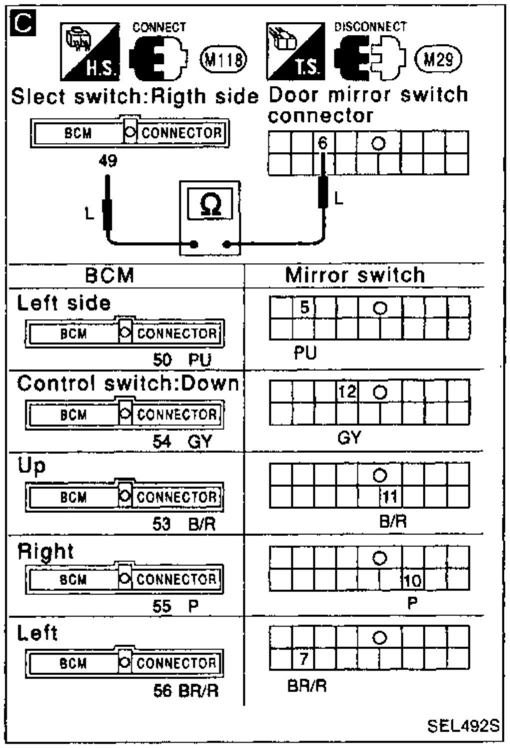
B

■ ACTIVE TEST ■

MIRROR MOTOR RH OFF
or
(MIRROR MOTOR LH OFF)

UP DWN | R L | STOP

SEL491S



SEL492S

A CHECK DOOR MIRROR CONTROL SWITCH.

CONSULT

See "MIR CON SW" in DATA MONITOR mode of AUTOMATIC DRIVE POSITIONER.
"MIR CON SW" should change from "OFF" to "ON" when pushing door mirror switch lever.

OR

ON-BOARD

Check door mirror switch in Switch monitor (Mode II) mode.
(Refer to On-board Diagnoses EL-82.)

OK → **B**

B CHECK THE DOOR MIRROR MOTOR.

CONSULT

See "MIRROR MOTOR RH or LH" in ACTIVE TEST mode of AUTOMATIC DRIVE POSITIONER.

Perform operation shown on display. Door mirror motor should operate.

NG ↓

Check door mirror actuator circuit.

OK ↓

Check LAN communication again.

NG (from A) ↓

C

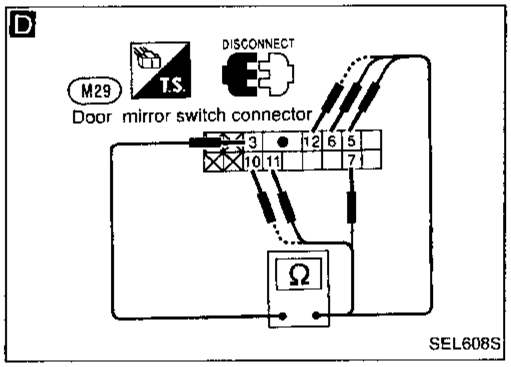
1) Disconnect door mirror switch connector.
2) Check continuity in applicable switch circuit selected from those listed in the Table below.

		Terminals	Continuity
Select switch	Right	㊾ - ⑥	Yes
	Left	㊿ - ⑤	
Control switch	Down	(54) - ⑫	
	Up	(53) - ⑪	
	Right	(55) - ⑩	
	Left	(56) - ⑦	

NG → Repair harness.

OK ↓

Ⓐ



Ⓐ

D

Check continuity of door mirror switch signal as follows:

Operation		Terminals	Continuity
Select switch	Right	⑥ - ③	Yes
	Left	⑤ - ③	
Control switch	Down	⑫ - ③	
	Up	⑪ - ③	
	Right	⑩ - ③	
	Left	⑦ - ③	

OK → Check door mirror control switch operation and LAN communication again.

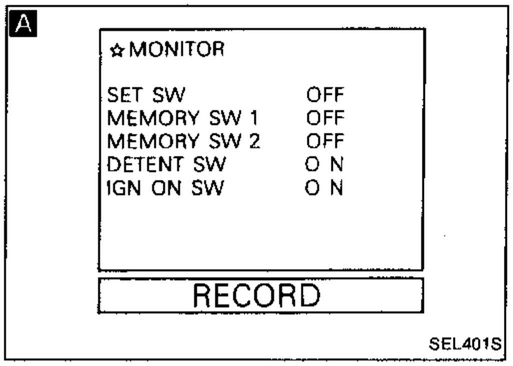
NG ↓

Replace door mirror switch.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

SYMPTOM: Door mirror automatic tilt down reverse system does not operate. (Manual operation is OK)

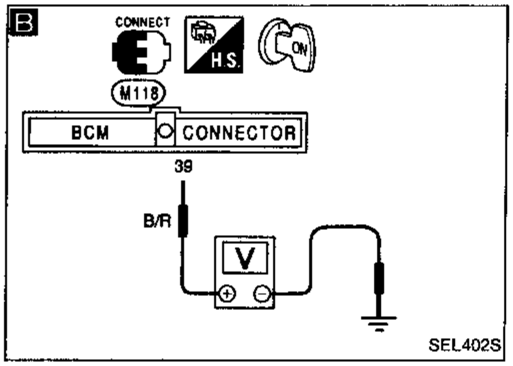


☆MONITOR

SET SW	OFF
MEMORY SW 1	OFF
MEMORY SW 2	OFF
DETENT SW	ON
IGN ON SW	ON

RECORD

SEL401S



CHECK IGNITION SWITCH ON SIGNAL.

A CONSULT

See "IGN ON SW" in DATA MONITOR mode of AUTOMATIC DRIVE POSITIONER.

"IGN ON SW" should be "ON".

OR

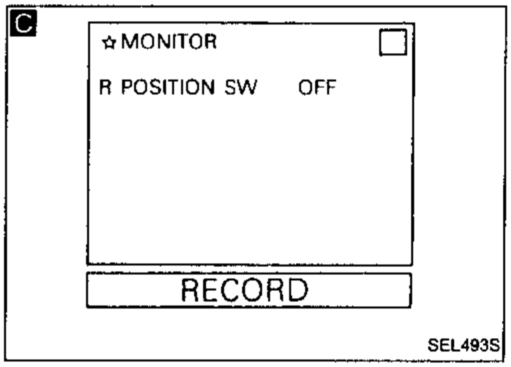
B TESTER

Check voltage between BCM connector terminal ㊴ and ground while ignition switch is "ON".

Terminals	Voltage
㊴ - GND	Battery voltage

NG → Check ignition switch circuit.

OK ↓

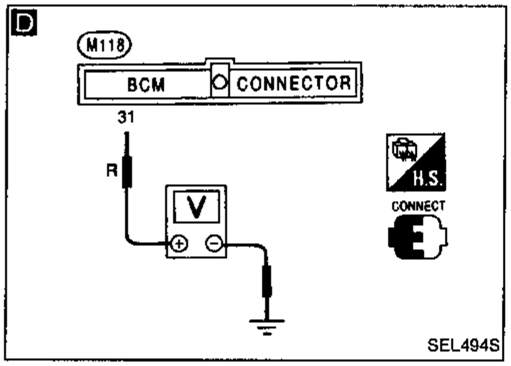


☆MONITOR ☐

R POSITION SW OFF

RECORD

SEL493S



CHECK REVERSE SWITCH CIRCUIT.

C CONSULT

See "R POSITION SW" in DATA MONITOR mode of AUTOMATIC DRIVE POSITIONER.

"R POSITION SW" should be "ON".

OR

D TESTER

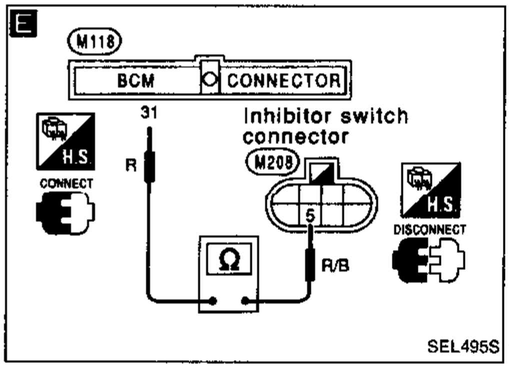
Check inhibitor switch reverse range position signal.

1) Set A/T selector lever in "R" position.
2) Check voltage.

Terminals	Voltage
㉛ - GND	Battery voltage

OK → Check LAN communication again.

NG ↓



E

1) Disconnect inhibitor switch connector.
2) Check harness continuity between BCM connector terminal ㉛ and inhibitor switch connector terminal ⑤.

Continuity should exist.

OK → Check INHIBITOR SWITCH circuit.

NG ↓

Repair harness.

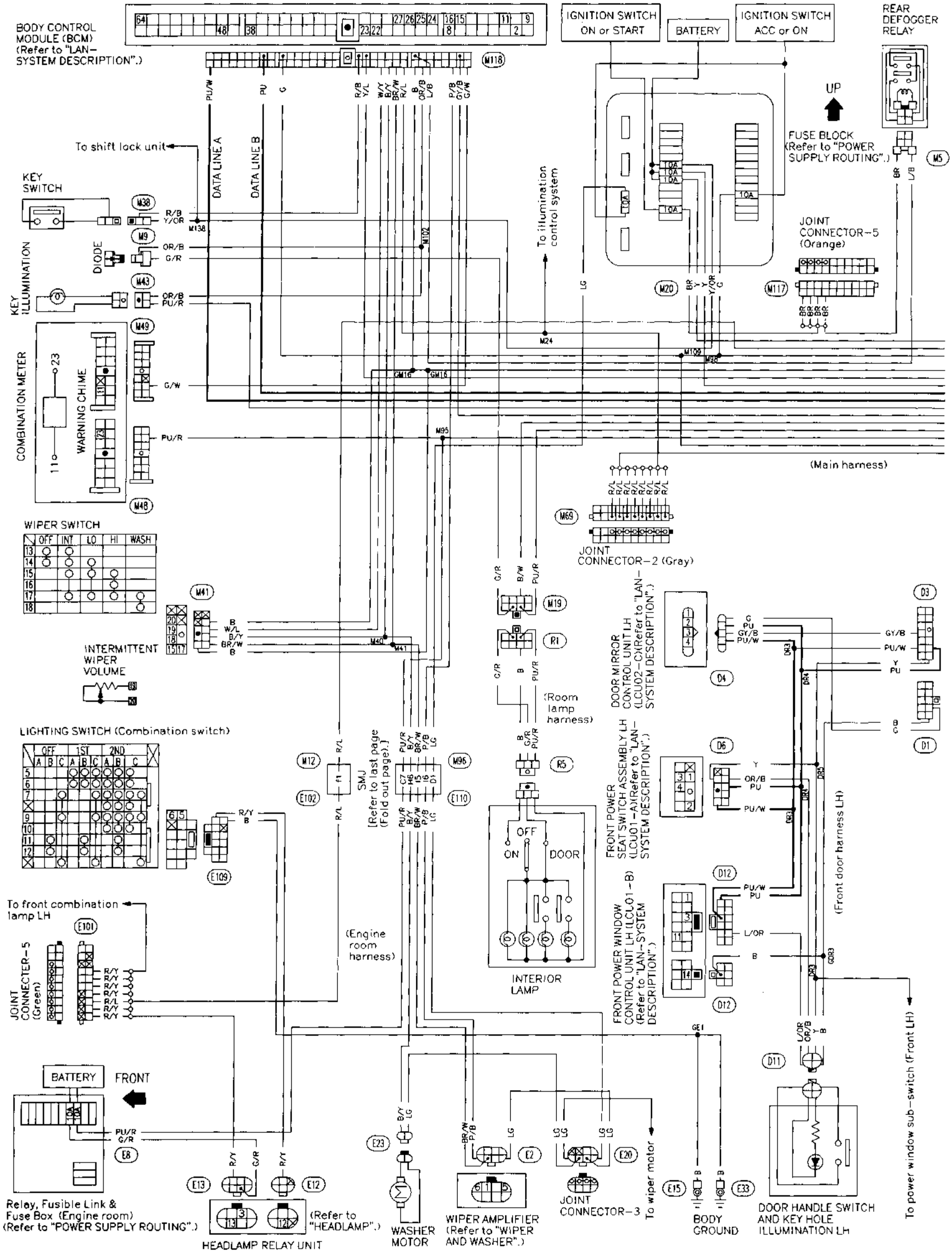
Description

FUNCTION

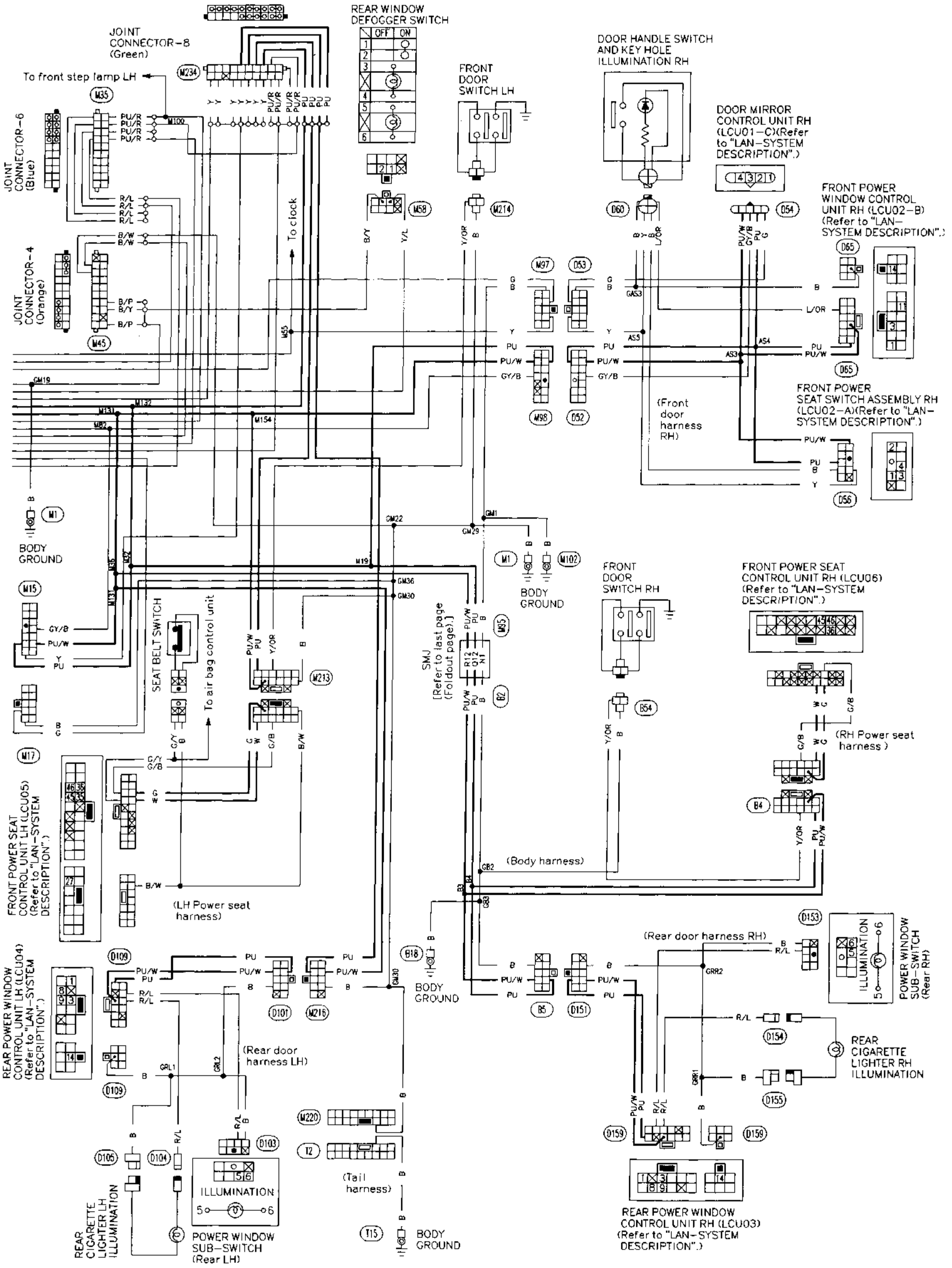
- The LAN has the following time control functions.

Item		Details of control
1, 2	Intermittent wiper control	Regulates intermittent time from approximately 2 to 21 seconds depending on the intermittent wiper volume setting.
3	Washer and wiper combination control	Wiper is operated in conjunction with washer switch.
4	Light warning chime timer	When driver's door is opened with light switch ON and ignition switch OFF, warning chime sounds.
5	Ignition key warning chime timer	When driver's door is opened with ignition switch OFF, warning chime sounds.
6	Seat belt warning chime timer	Sounds warning chime for about 7 seconds if ignition switch is turned "ON" when seat belt switch is "ON" (seat belt is unfastened).
7	Rear defogger timer	Rear defogger operates for about 15 minutes when defogger switch is ON.
8	Interior lamp timer	Fades out interior lamp and ignition keyhole illumination when driver's side door is opened and closed or door outside handle is pulled and released.
9	Door key hole illumination	Illuminates for about 10 seconds when door outside handle is pulled.

Wiring Diagram



Wiring Diagram (Cont'd)



Trouble Diagnoses

- Perform "LAN Communication Check" and Preliminary Check before starting with the Diagnostic Procedures.

SYMPTOM CHART

PROCEDURE		LAN Communication Check	Preliminary Check			Diagnostic Procedure									
REFERENCE PAGE		EL-102	EL-173	EL-173	EL-173	EL-175	EL-176	EL-177	EL-178	EL-179	EL-181	EL-182	EL-183	EL-184	EL-184
SYMPTOM		LAN Communication Check	Procedure 1	Procedure 2	Procedure 3	Diagnostic Procedure 1	Diagnostic Procedure 2	Diagnostic Procedure 3	Diagnostic Procedure 4	Diagnostic Procedure 5	Diagnostic Procedure 6	Diagnostic Procedure 7	Diagnostic Procedure 8	Diagnostic Procedure 9	Diagnostic Procedure 10
Wiper & washer	Intermittent wiper does not operate.	○				○									
	Intermittent time of wiper cannot be adjusted.	○					○								
	Wiper and washer activate individually but not in combination.	○						○							
Warning	Light warning chime does not activate.	○	○						○						
	Ignition key warning chime does not activate.	○		○						○					
	Seat belt warning chime does not activate.	○			○						○				
Rear defogger	Rear defogger does not activate, or go off after activating.	○										○			
Illumination	Interior lamp does not fade out after driver's door is closed.	○											○		
	Door key hole illumination on one side (driver side or passenger side) does not come on.	○												○	
	Door key hole illuminations on both sides (driver side and passenger side) do not come on.	○													○

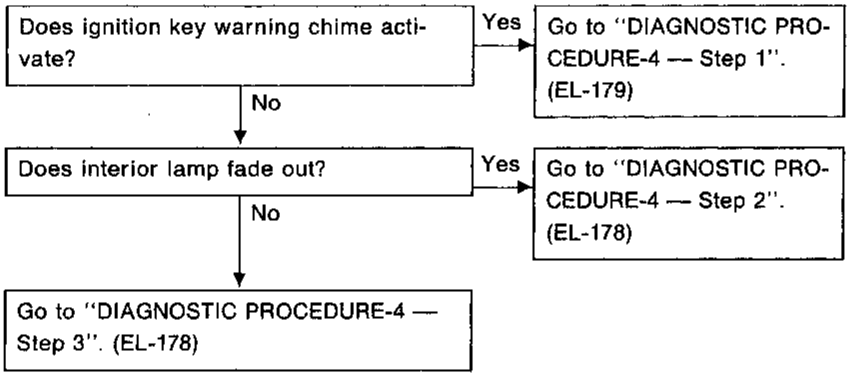
* Each switch operation can also be checked by ON-BOARD instead of CONSULT or TESTER in each of the Diagnostic Procedures above. (Refer to "ON-BOARD Diagnoses" in EL-82.)

Trouble Diagnoses (Cont'd)

PRELIMINARY CHECK

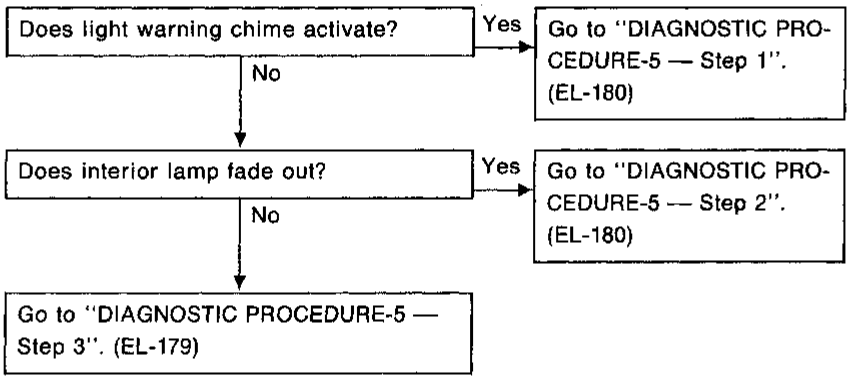
Procedure 1

- Light warning chime does not activate.



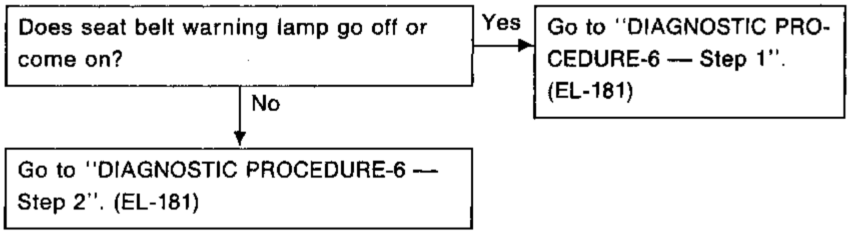
Procedure 2

- Ignition key warning chime dose not activate.



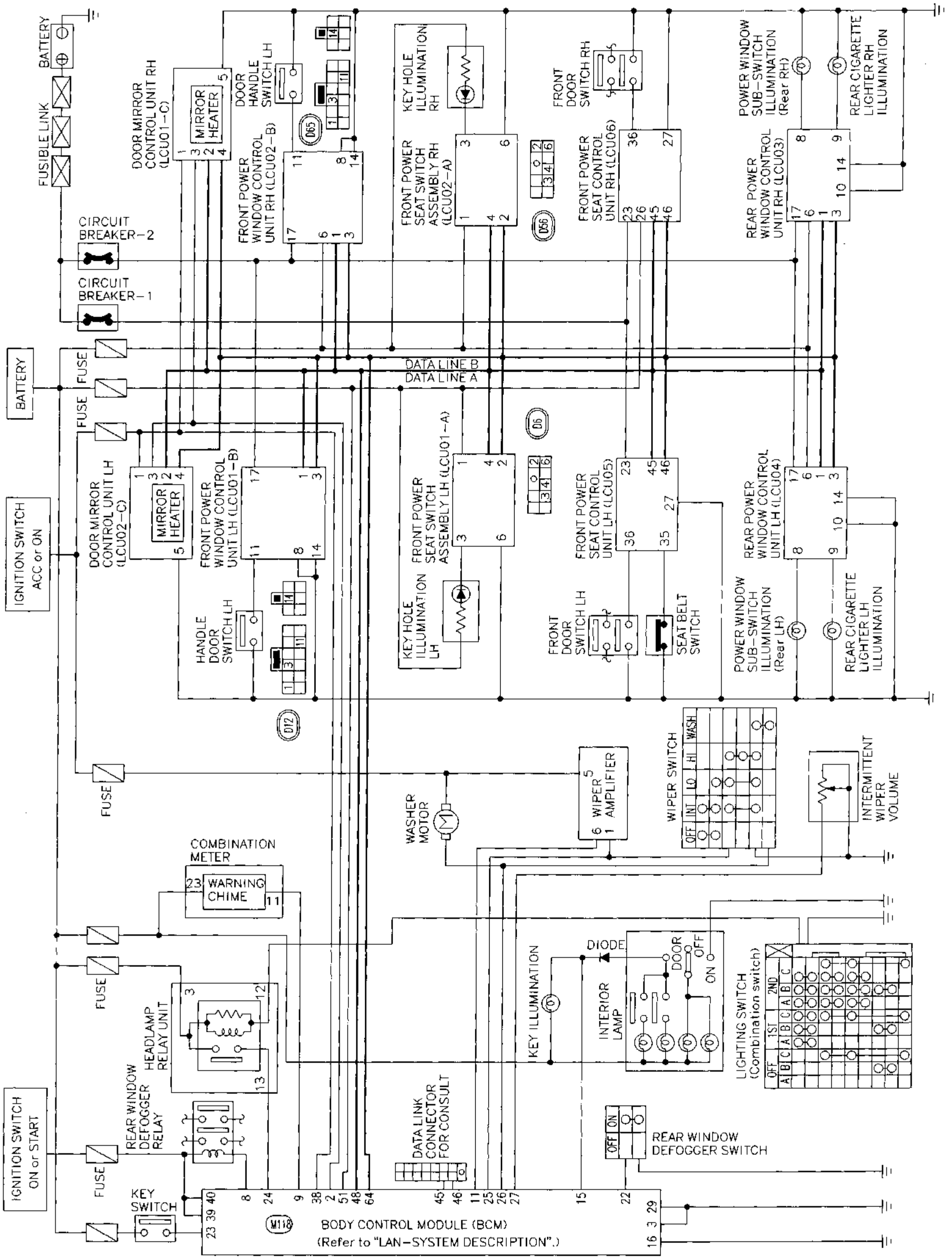
Procedure 3

- Seat belt warning chime does not activate.



Trouble Diagnoses (Cont'd)

CIRCUIT DIAGRAM FOR QUICK PINPOINT CHECK



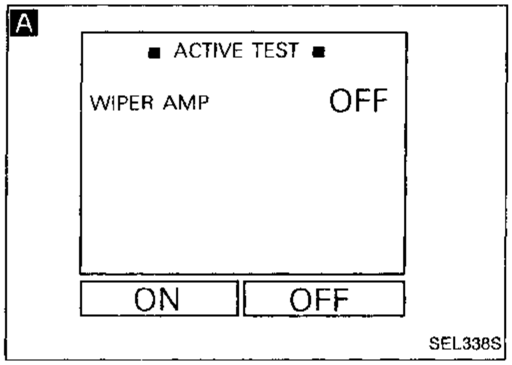
MEL817D

Trouble Diagnoses (Cont'd)

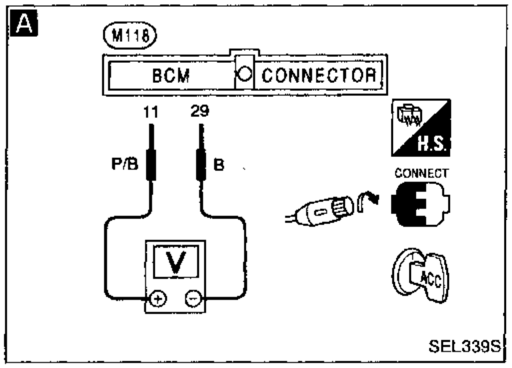
DIAGNOSTIC PROCEDURE 1

SYMPTOM: Intermittent wiper does not operate.

A



SEL338S



SEL339S

A

WIPER AMPLIFIER CIRCUIT CHECK

1. Perform "Active test" of wiper amplifier.
2. Check wiper operation.

— OR —

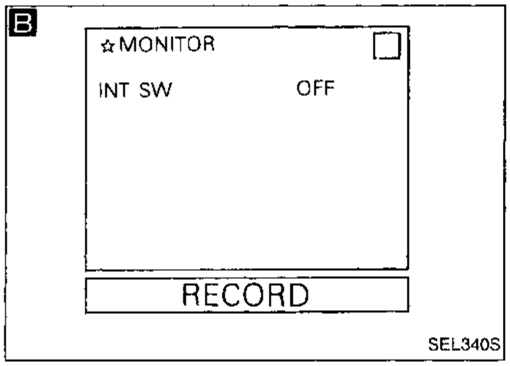
1. Turn ignition switch to "ACC".
2. Turn wiper switch to "INT" or "OFF".
3. Measure voltage between BCM terminals ⑪ and ㉙.

Condition of wiper switch	Voltage [V]
OFF	Approx. 12
INT	Pointer swings from 0 to 12 every 2 to 21 seconds.

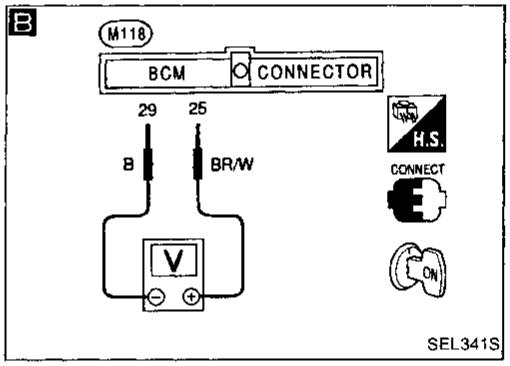
NG → Check wiper amplifier. Refer to "WIPER AND WASHER". (EL-216).

- OK → Check wiper amplifier circuit.
- NG → Replace wiper amplifier.

OK ↓



SEL340S



SEL341S

B

INTERMITTENT SWITCH INPUT SIGNAL CHECK

See "INT SW" in "Data monitor" mode.
When wiper switch is in INT position:
INT SW ON
When wiper switch is in OFF position:
INT SW OFF

— OR —

Measure voltage between BCM terminals ㉕ and ㉙.

Condition of wiper switch	Voltage [V]
OFF	Approx. 12
INT	0

NG → Check wiper switch. Refer to "COMBINATION SWITCH". (EL-18)

- NG → Replace wiper switch.
- OK → Check harness continuity between BCM and wiper switch.
  - NG → Repair harness.
  - OK → Perform LAN communication check again. (Refer to EL-102.)

OK ↓

Perform LAN communication check again. (Refer to EL-102.)

OK ↓

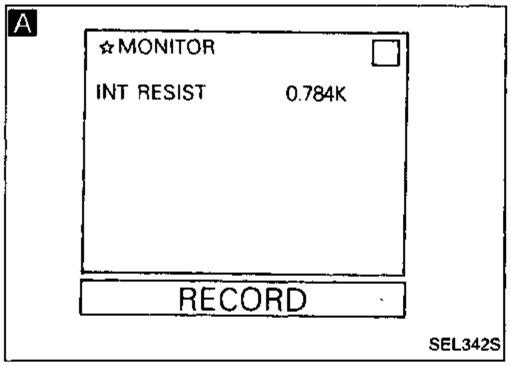
Replace BCM.

GI
MA
EM
LC
EF &
EC
FE
AT
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

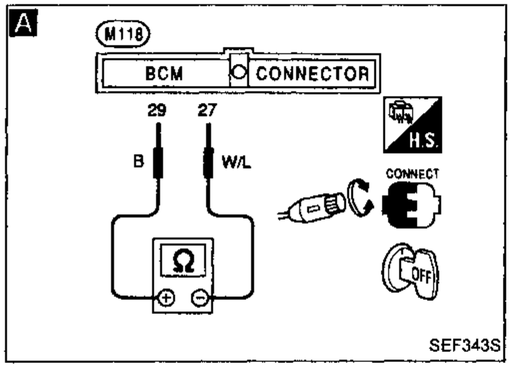
SYMPTOM: Intermittent time of wiper cannot be adjusted.



☆MONITOR ☐

INT RESIST 0.784K

SEL342S



SEF343S

A

INTERMITTENT WIPER VOLUME INPUT SIGNAL CHECK

See "INT RESIST" in "Data monitor" mode while turning intermittent wiper volume.

Position of wiper knob	Resistance [kΩ]
S	0
L	Approx. 1

— OR —

Measure resistance between BCM terminals ㉗ and ㉙ while turning intermittent wiper volume.

Position of wiper knob	Resistance [kΩ]
S	0
L	Approx. 1

OK → Perform LAN communication check again. (Refer to EL-102.)

- OK → Replace BCM.

NG ↓

Check intermittent wiper volume. Refer to "COMBINATION SWITCH". (EL-18)

NG → Replace intermittent wiper volume.

OK ↓

Check harness continuity between BCM and intermittent wiper volume.

NG → Repair harness.

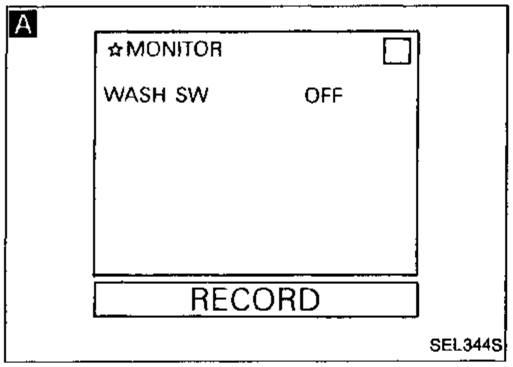
OK ↓

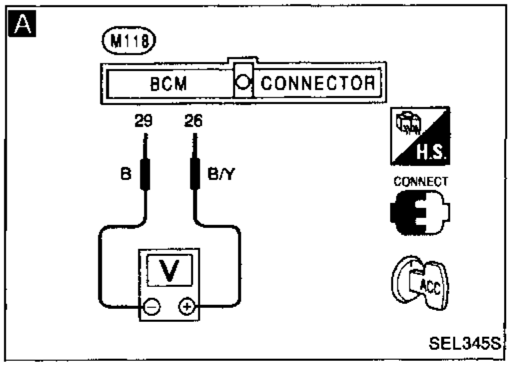
Replace BCM.

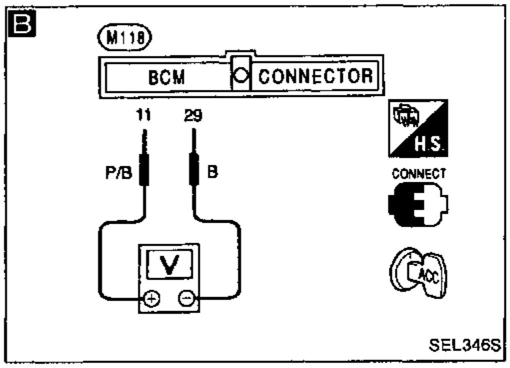
Trouble Diagnoses (Cont'd)

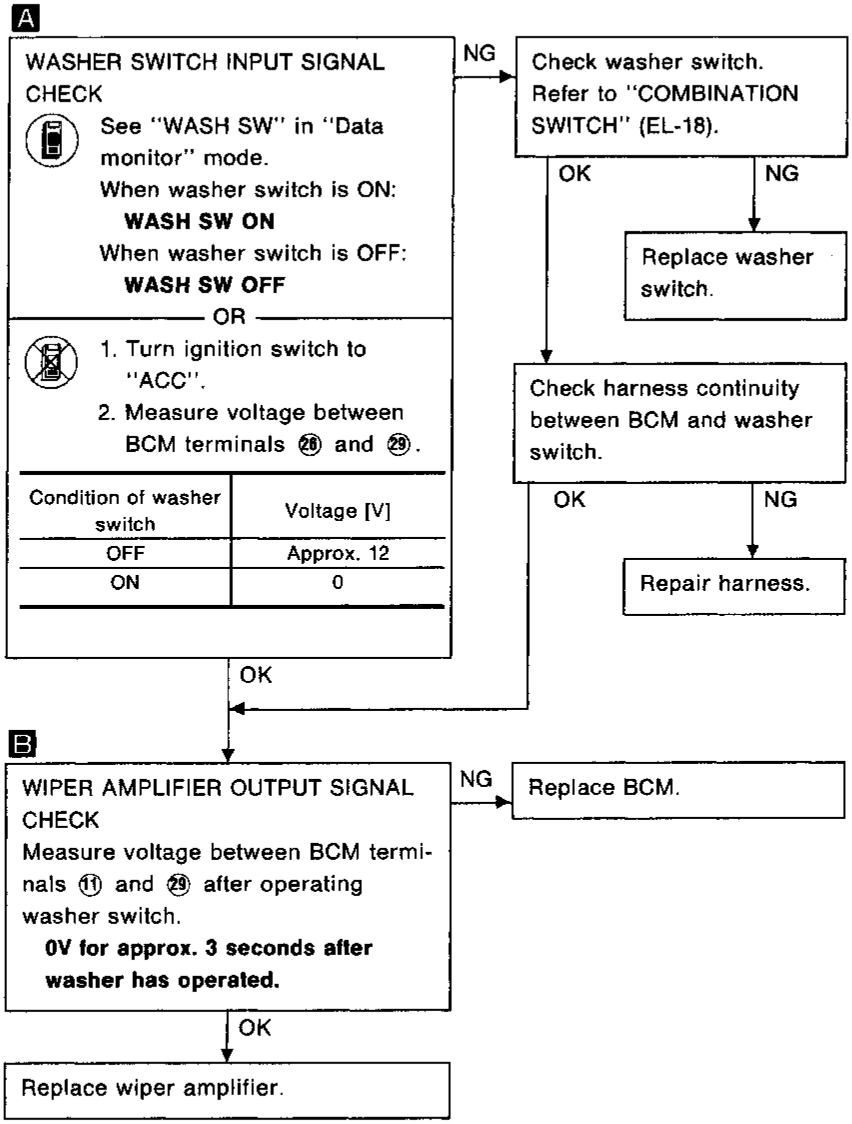
DIAGNOSTIC PROCEDURE 3

SYMPTOM: Wiper and washer activate individually but not in combination.









A

WASHER SWITCH INPUT SIGNAL CHECK

See "WASH SW" in "Data monitor" mode.

When washer switch is ON:
WASH SW ON

When washer switch is OFF:
WASH SW OFF

OR

1. Turn ignition switch to "ACC".
2. Measure voltage between BCM terminals ㉖ and ㉙.

Condition of washer switch	Voltage [V]
OFF	Approx. 12
ON	0

NG → Check washer switch. Refer to "COMBINATION SWITCH" (EL-18).

NG → Replace washer switch.

OK → Check harness continuity between BCM and washer switch.

NG → Repair harness.

OK

B

WIPER AMPLIFIER OUTPUT SIGNAL CHECK

Measure voltage between BCM terminals ⑪ and ㉙ after operating washer switch.

0V for approx. 3 seconds after washer has operated.

NG → Replace BCM.

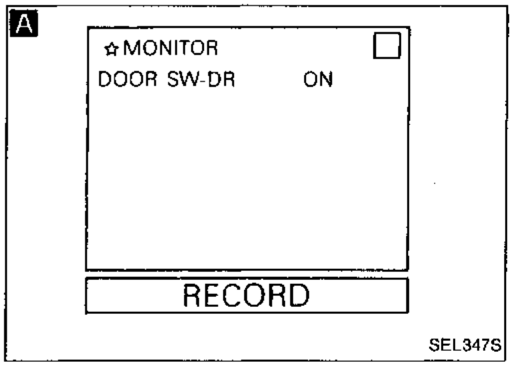
OK → Replace wiper amplifier.

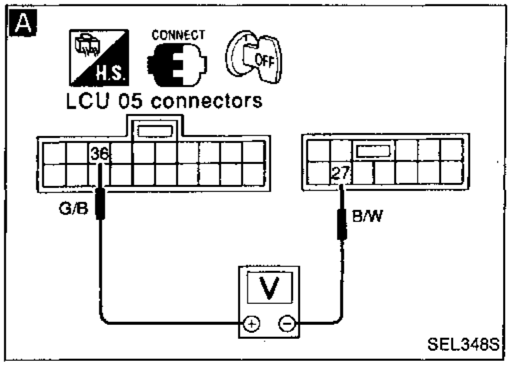
Trouble Diagnoses (Cont'd)

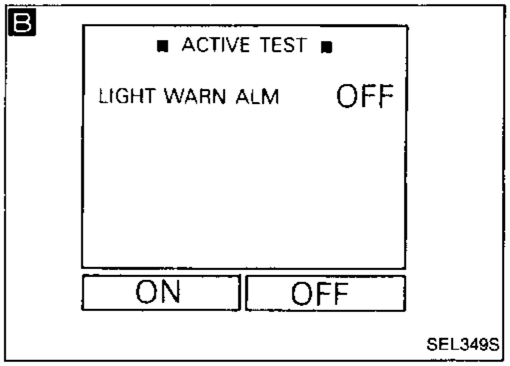
DIAGNOSTIC PROCEDURE 4

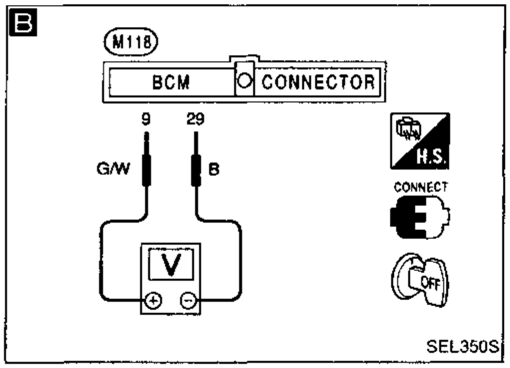
SYMPTOM: Light warning chime does not activate.

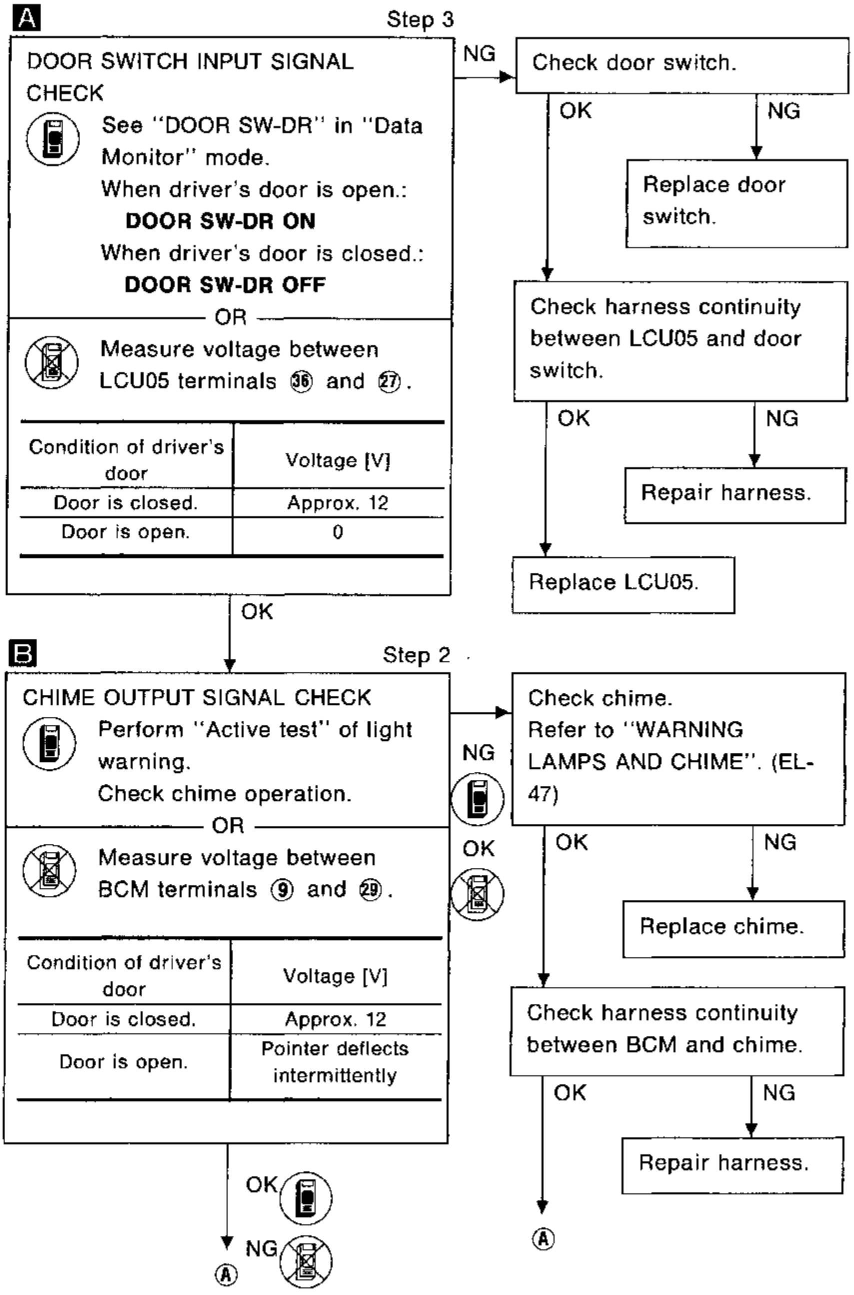
- **Perform "PRELIMINARY CHECK — Procedure 1" before referring to the following flow chart.**











A Step 3

DOOR SWITCH INPUT SIGNAL CHECK

See "DOOR SW-DR" in "Data Monitor" mode.
When driver's door is open.:
DOOR SW-DR ON
When driver's door is closed.:
DOOR SW-DR OFF

OR

Measure voltage between LCU05 terminals ㊱ and ㉗.

Condition of driver's door	Voltage [V]
Door is closed.	Approx. 12
Door is open.	0

NG → Check door switch.
- OK → Check harness continuity between LCU05 and door switch.
  - OK → Replace LCU05.
  - NG → Repair harness.
- NG → Replace door switch.

OK ↓

B Step 2

CHIME OUTPUT SIGNAL CHECK

Perform "Active test" of light warning.
Check chime operation.

OR

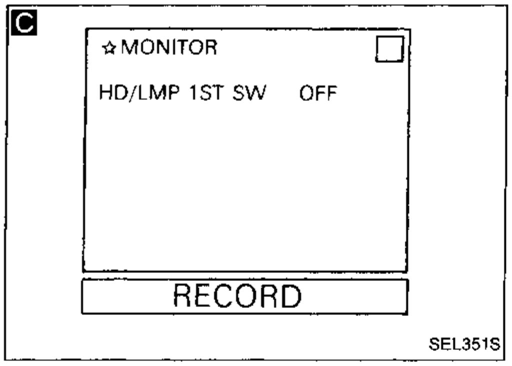
Measure voltage between BCM terminals ⑨ and ㉙.

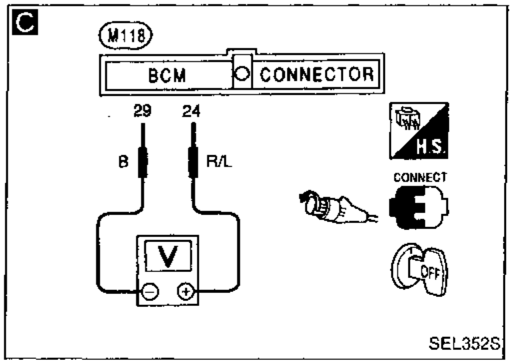
Condition of driver's door	Voltage [V]
Door is closed.	Approx. 12
Door is open.	Pointer deflects intermittently

NG (CONSULT) / OK (voltage) → Check chime. Refer to "WARNING LAMPS AND CHIME". (EL-47)
- OK → Check harness continuity between BCM and chime.
  - OK → Ⓐ
  - NG → Repair harness.
- NG → Replace chime.

OK (CONSULT) / NG (voltage) → Ⓐ

Trouble Diagnoses (Cont'd)





Ⓐ

C Step 1

LIGHTING SWITCH INPUT SIGNAL CHECK

See "HD/LMP 1ST SW" in "Data Monitor" mode.
When lighting switch is 1ST or 2ND:
HD/LMP 1ST SW ON
When lighting switch is OFF:
HD/LMP 1ST SW OFF

— OR —

Measure voltage between BCM terminals ㉔ and ㉙.

Condition	Voltage [V]
Lighting switch is ON.	Approx. 12
Lighting switch is OFF.	0

NG → Check lighting switch. Refer to "COMBINATION SWITCH". (EL-18)

- NG → Replace light switch.
- OK → Check headlamp relay unit.
  - NG → Replace head-lamp relay unit.
  - OK → Check fuse (10A) between BCM and headlamp relay unit.
    - NG → Replace fuse.
    - OK → Repair harness.

OK ↓

Perform LAN communication check. Refer to EL-102.

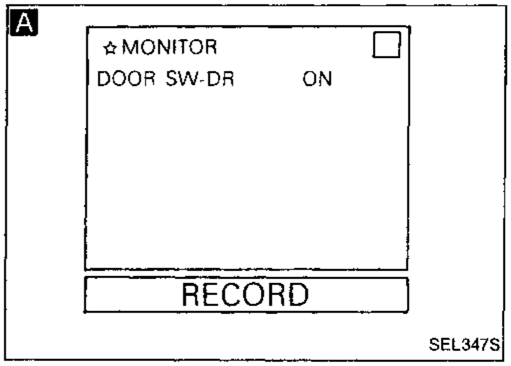
OK ↓

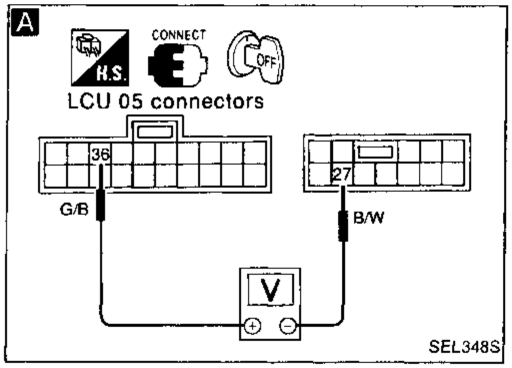
Replace BCM.

DIAGNOSTIC PROCEDURE 5

SYMPTOM: Ignition key warning chime does not activate.

- **Perform "PRELIMINARY CHECK — Procedure 2" before referring to the following flow chart.**





A Step 3

DOOR SWITCH INPUT SIGNAL CHECK

See "DOOR SW-DR" in "Data Monitor" mode.
When driver's door is open.:
DOOR SW-DR ON
When driver's door is closed.:
DOOR SW-DR OFF

— OR —

Measure voltage between LCU05 terminals ㊱ and ㉗.

Condition of driver's door	Voltage [V]
Door is closed.	Approx. 12
Door is open.	0

NG → Check door switch.

- NG → Replace door switch.
- OK → Check harness continuity between LCU05 and door switch.
  - NG → Repair harness.
  - OK → Replace LCU05.

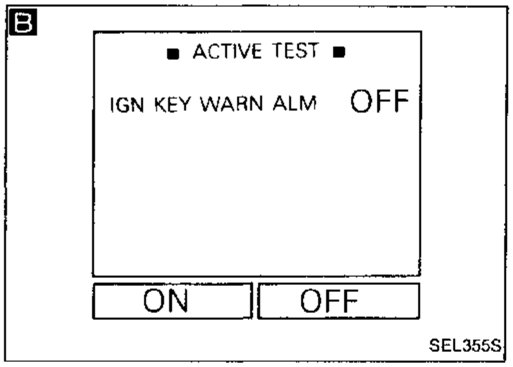
OK ↓

Ⓐ

GI
MA
EM
LC
EF & EC
FE
AT
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

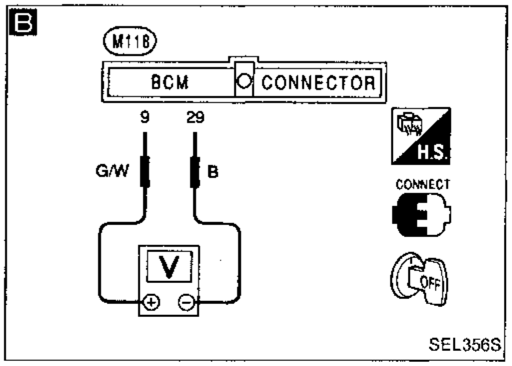
Trouble Diagnoses (Cont'd)

B


■ ACTIVE TEST ■

IGN KEY WARN ALM OFF

B



Ⓐ

B Step 2

CHIME OUTPUT SIGNAL CHECK

Perform "Active test" of ignition key warning.

Check chime operation.

— OR —

Measure voltage between BCM terminals ⑨ and ㉙.

Condition of driver's door	Voltage [V]
Door is closed.	Approx. 12
Door is open.	Pointer deflects intermittently

NG

Check chime.
Refer to "WARNING LAMPS AND CHIME". (EL-47)

OK / NG

NG: Replace chime.

OK: Check harness continuity between BCM and chime.

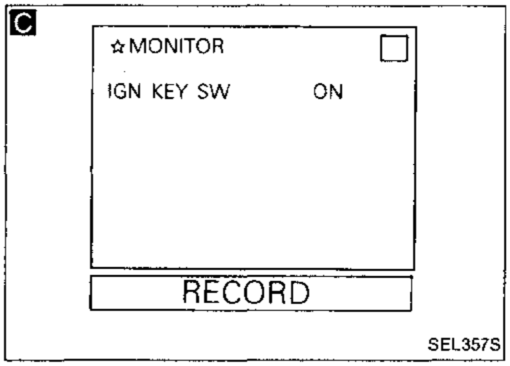
OK / NG

NG: Repair harness.

OK: Replace BCM.

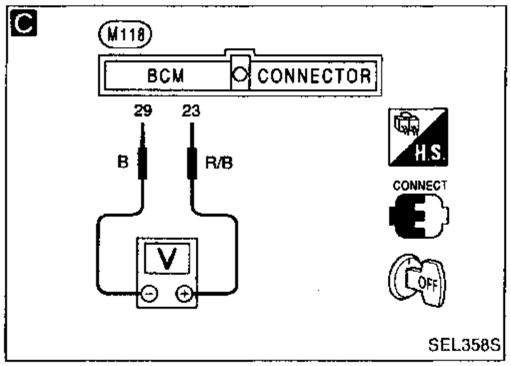
OK / NG

C


☆MONITOR ☐

IGN KEY SW ON

C



C Step 1

IGNITION KEY SWITCH INPUT SIGNAL CHECK

See "IGN KEY SW" in "Data monitor" mode.

When key is inserted.:

IGN KEY SW ON

When key is pulled.:

IGN KEY SW OFF

— OR —

Measure voltage between BCM terminals ㉓ and ㉙.

Condition	Voltage [V]
Key is inserted.	Approx. 12
Key is pulled	0

NG

Check ignition key switch.

OK / NG

NG: Replace ignition key switch.

OK: Check harness continuity between BCM and ignition key switch.

OK / NG

NG: Repair harness.

OK

Perform LAN communication check again. (Refer to EL-102.)

OK

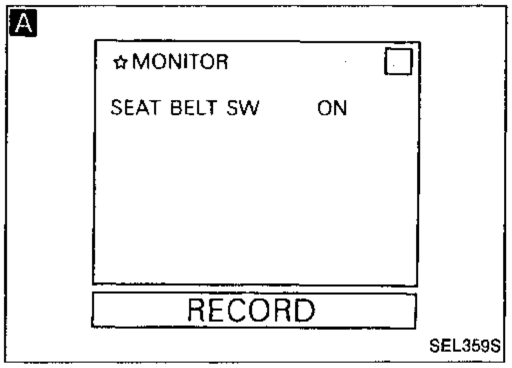
Replace BCM.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

SYMPTOM: Seat belt warning chime does not activate.

- **Perform "PRELIMINARY CHECK — Procedure 3" before referring to the following flow chart.**

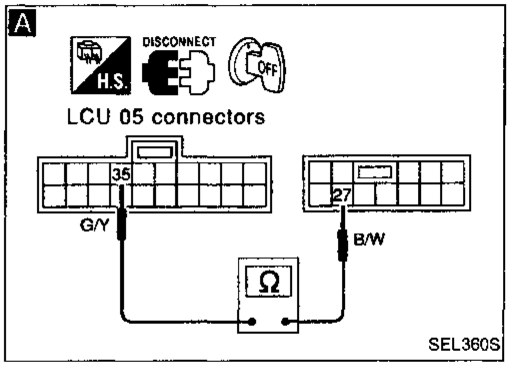


☆MONITOR ☐

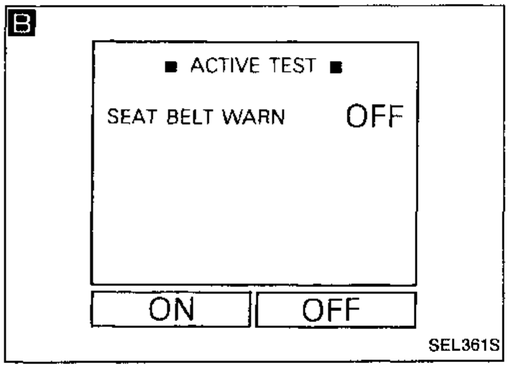
SEAT BELT SW ON

RECORD

SEL359S



SEL360S

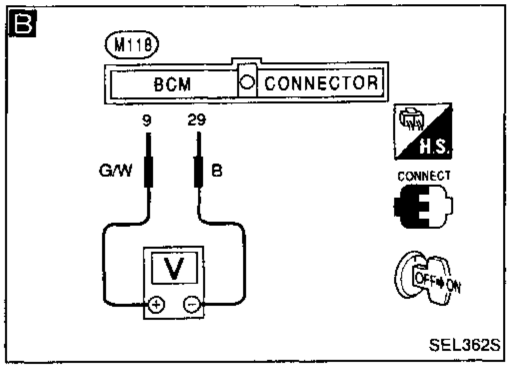


■ ACTIVE TEST ■

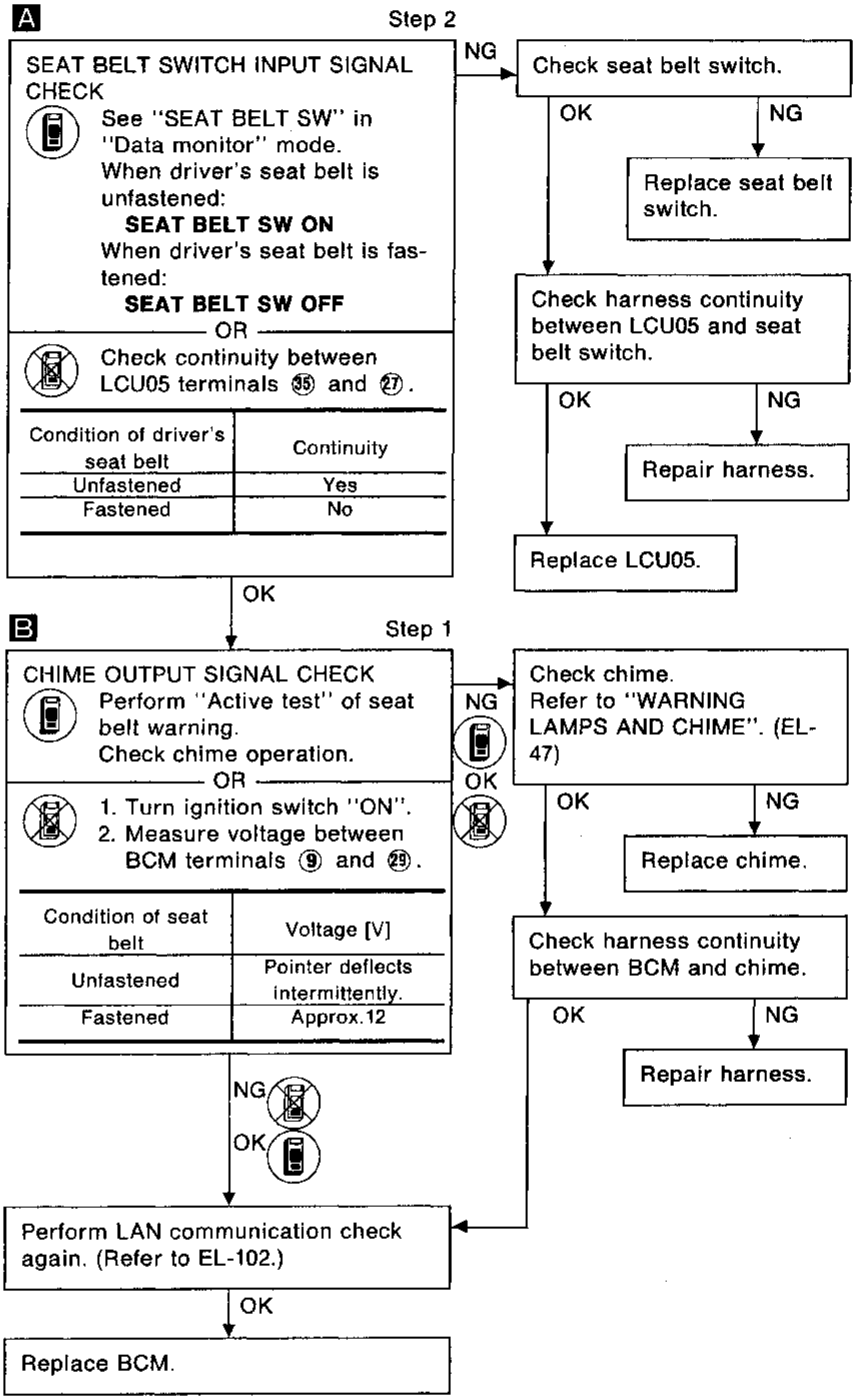
SEAT BELT WARN OFF

ON OFF

SEL361S



SEL362S



A Step 2

SEAT BELT SWITCH INPUT SIGNAL CHECK

See "SEAT BELT SW" in "Data monitor" mode.
When driver's seat belt is unfastened:
SEAT BELT SW ON
When driver's seat belt is fastened:
SEAT BELT SW OFF

OR

Check continuity between LCU05 terminals ㉟ and ㉗.

Condition of driver's seat belt	Continuity
Unfastened	Yes
Fastened	No

NG → Check seat belt switch.

- OK → Check harness continuity between LCU05 and seat belt switch.
  - OK → Replace LCU05.
  - NG → Repair harness.
- NG → Replace seat belt switch.

OK ↓

B Step 1

CHIME OUTPUT SIGNAL CHECK

Perform "Active test" of seat belt warning.
Check chime operation.

OR

1. Turn ignition switch "ON".
2. Measure voltage between BCM terminals ⑨ and ㉙.

Condition of seat belt	Voltage [V]
Unfastened	Pointer deflects intermittently.
Fastened	Approx.12

NG (CONSULT) / OK (tester) → Check chime. Refer to "WARNING LAMPS AND CHIME". (EL-47)

- OK → Check harness continuity between BCM and chime.
  - OK → Perform LAN communication check again. (Refer to EL-102.)
  - NG → Repair harness.
- NG → Replace chime.

NG (tester) / OK (CONSULT) ↓

Perform LAN communication check again. (Refer to EL-102.)

OK ↓

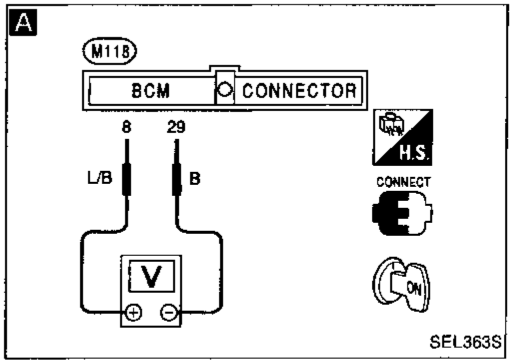
Replace BCM.

GI
MA
EM
LC
EF &
EC
FE
AT
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

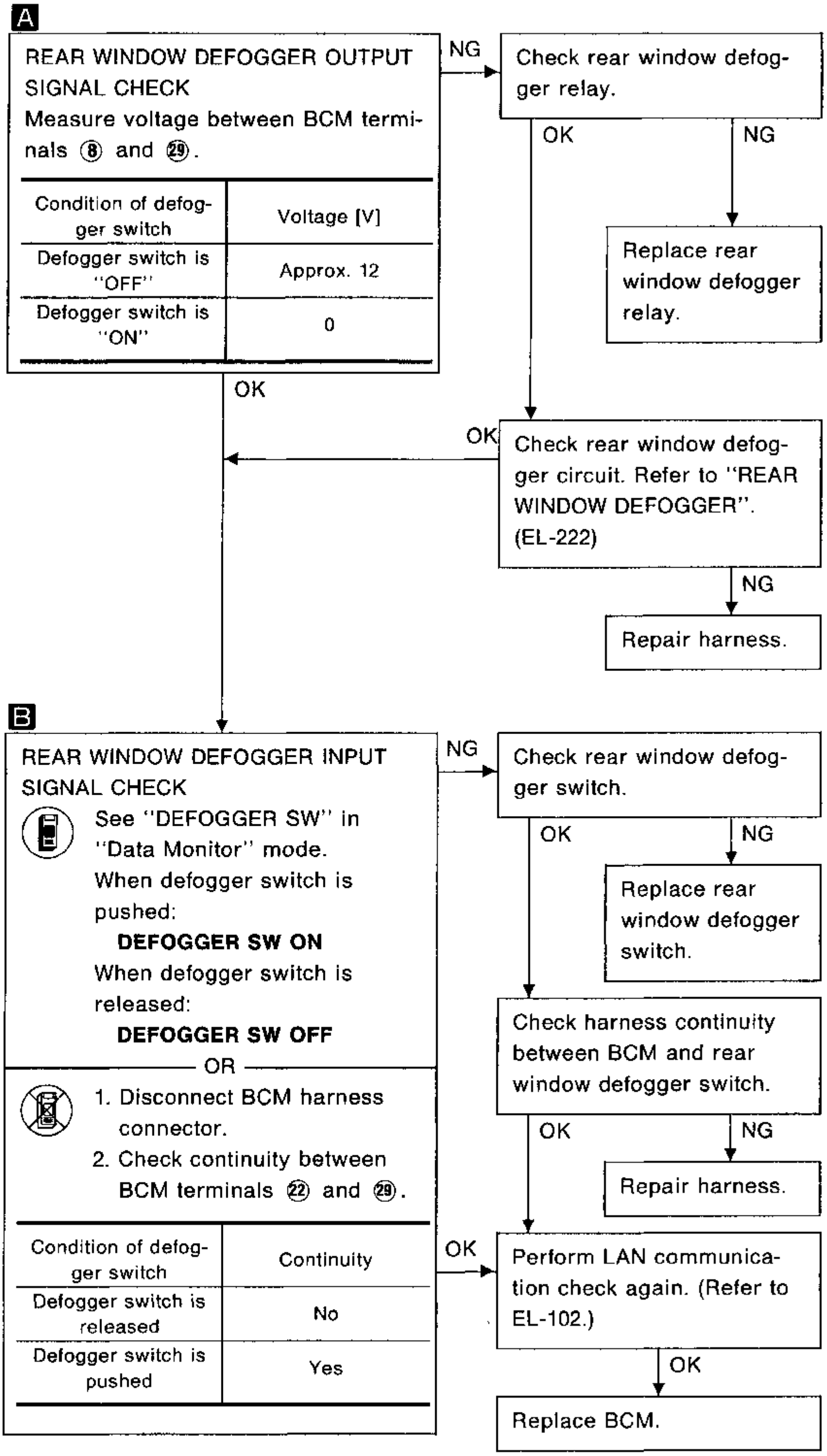
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7

SYMPTOM: Rear defogger does not activate, or does not go off after activating.



SEL363S



A

REAR WINDOW DEFOGGER OUTPUT SIGNAL CHECK
Measure voltage between BCM terminals ⑧ and ㉙.

Condition of defogger switch	Voltage [V]
Defogger switch is "OFF"	Approx. 12
Defogger switch is "ON"	0

NG → Check rear window defogger relay.
- OK → Check rear window defogger circuit. Refer to "REAR WINDOW DEFOGGER". (EL-222)
  - OK → (to B)
  - NG → Repair harness.
- NG → Replace rear window defogger relay.

OK ↓

B

REAR WINDOW DEFOGGER INPUT SIGNAL CHECK

See "DEFOGGER SW" in "Data Monitor" mode.
When defogger switch is pushed:
DEFOGGER SW ON
When defogger switch is released:
DEFOGGER SW OFF

OR

1. Disconnect BCM harness connector.
2. Check continuity between BCM terminals ㉒ and ㉙.

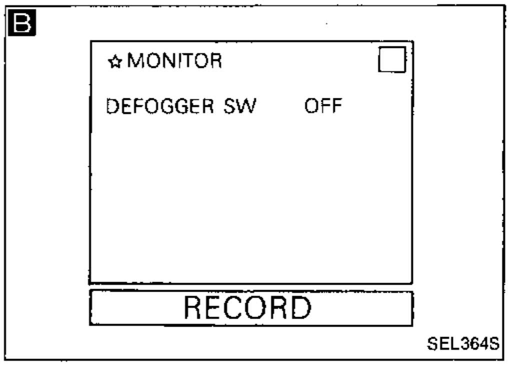
Condition of defogger switch	Continuity
Defogger switch is released	No
Defogger switch is pushed	Yes

NG → Check rear window defogger switch.
- OK → Check harness continuity between BCM and rear window defogger switch.
  - OK → Perform LAN communication check again. (Refer to EL-102.)
  - NG → Repair harness.
- NG → Replace rear window defogger switch.

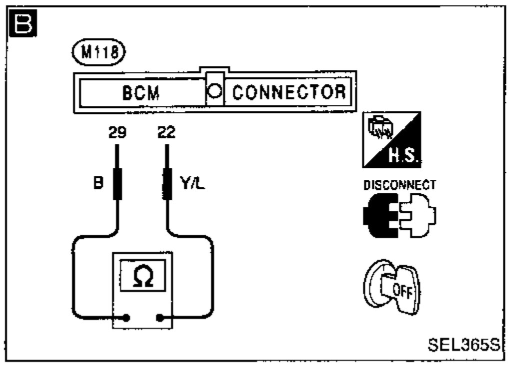
OK → Perform LAN communication check again. (Refer to EL-102.)

OK ↓

Replace BCM.



SEL364S

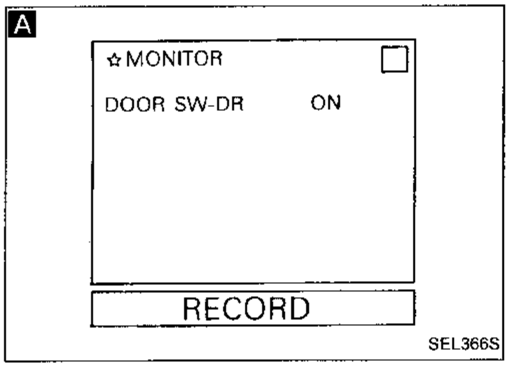


SEL365S

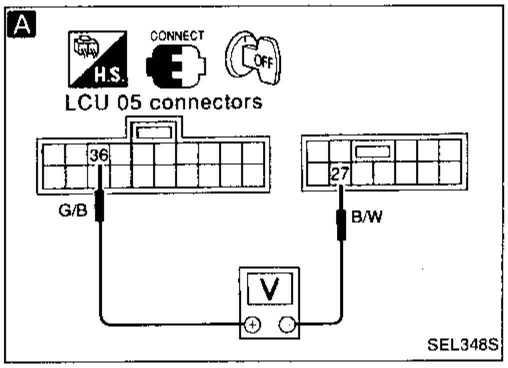
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 8

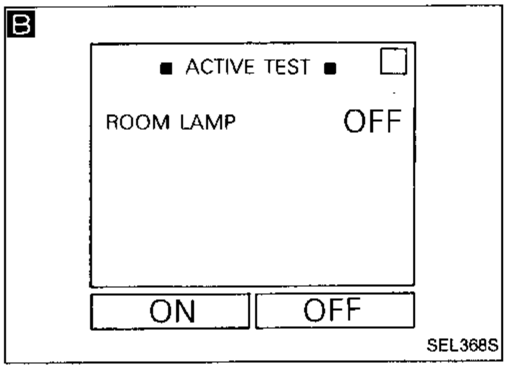
SYMPTOM: Interior lamp does not fade out after driver's door is closed.



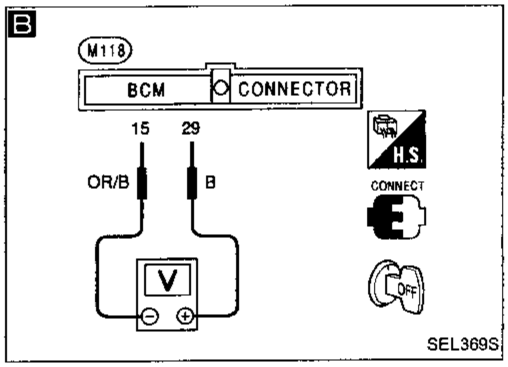
SEL366S



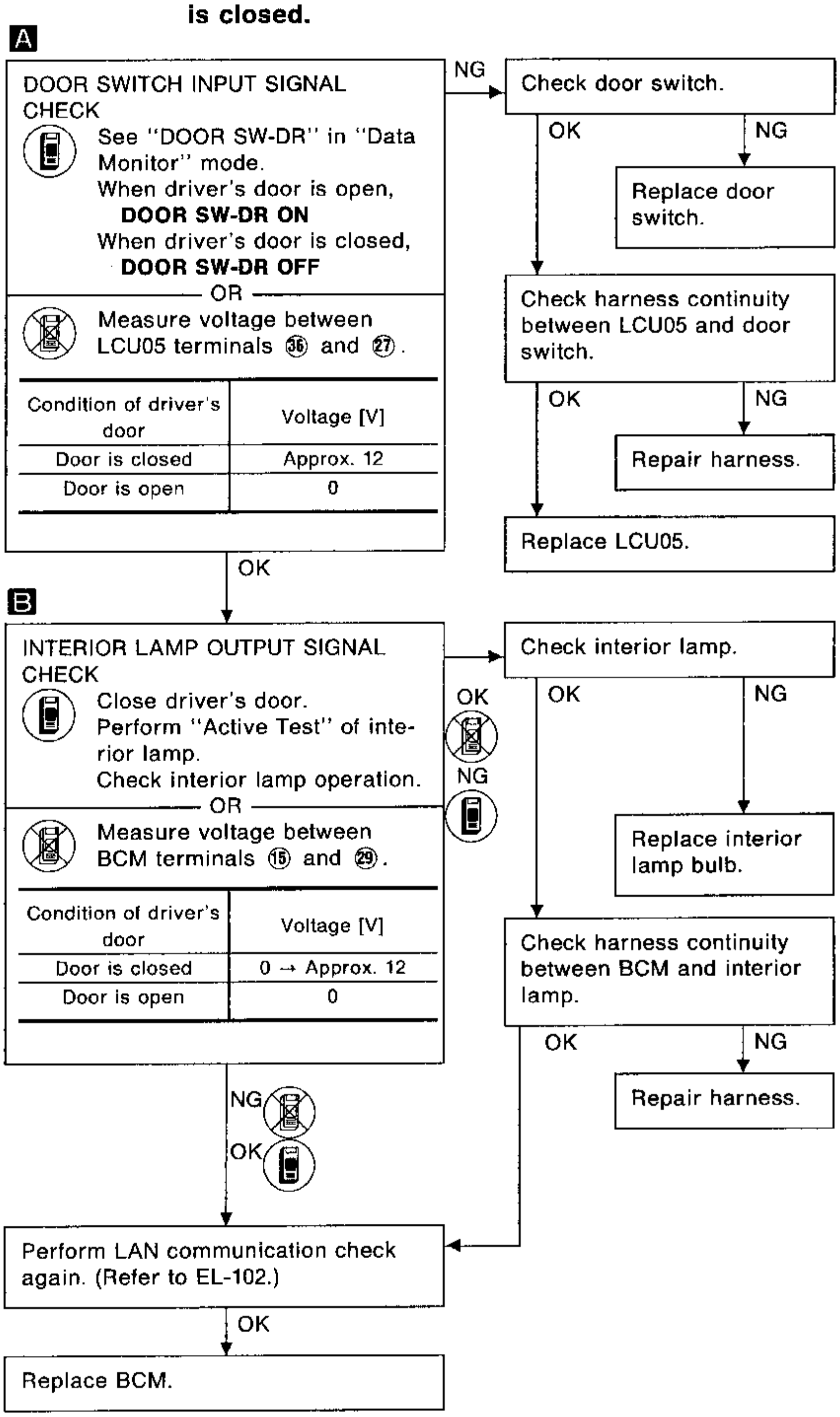
SEL348S



SEL368S



SEL369S



A

DOOR SWITCH INPUT SIGNAL CHECK

See "DOOR SW-DR" in "Data Monitor" mode.
When driver's door is open,
DOOR SW-DR ON
When driver's door is closed,
DOOR SW-DR OFF

— OR —

Measure voltage between LCU05 terminals ㊱ and ㉗.

Condition of driver's door	Voltage [V]
Door is closed	Approx. 12
Door is open	0

NG: Check door switch.
- OK: Check harness continuity between LCU05 and door switch.
  - OK: Replace LCU05.
  - NG: Repair harness.
- NG: Replace door switch.

OK

B

INTERIOR LAMP OUTPUT SIGNAL CHECK

Close driver's door.
Perform "Active Test" of interior lamp.
Check interior lamp operation.

— OR —

Measure voltage between BCM terminals ⑮ and ㉙.

Condition of driver's door	Voltage [V]
Door is closed	0 → Approx. 12
Door is open	0

OK / NG: Check interior lamp.
- OK: Check harness continuity between BCM and interior lamp.
  - OK: Perform LAN communication check again.
  - NG: Repair harness.
- NG: Replace interior lamp bulb.

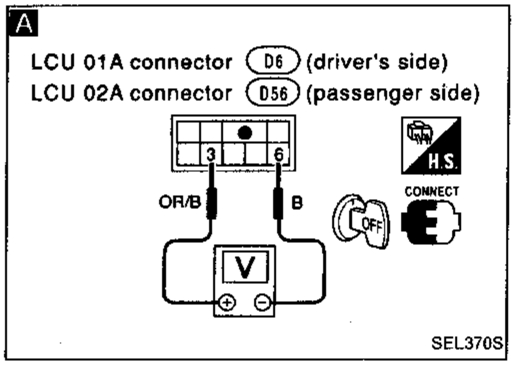
NG / OK

Perform LAN communication check again. (Refer to EL-102.)

OK

Replace BCM.

Trouble Diagnoses (Cont'd)



DIAGNOSTIC PROCEDURE 9

SYMPTOM: Door keyhole illumination on one side (driver side or passenger side) does not come on.

A

KEY HOLE ILLUMINATION OUTPUT SIGNAL CHECK
Measure voltage between LCU01A (driver side) or LCU02A (passenger side) terminals ③ and ⑥ when either front door is opened and closed.

Condition of a front door	Voltage [V]
Door is open	0
Door is closed	0 → Approx. 12

NG → Disconnect the LCU connector, and connect LCU terminal ③ and body ground with wire. **Keyhole illumination should come on.**

- OK → Replace LCU01A or 02A.
- NG → Repair keyhole illumination circuit.

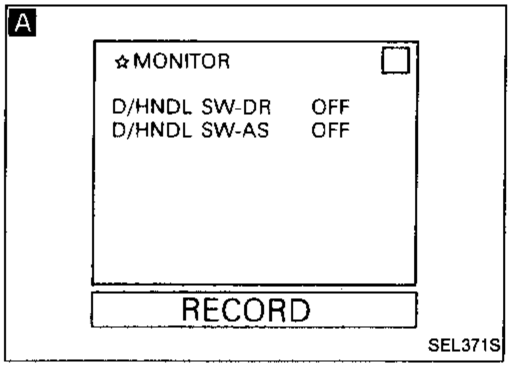
OK ↓

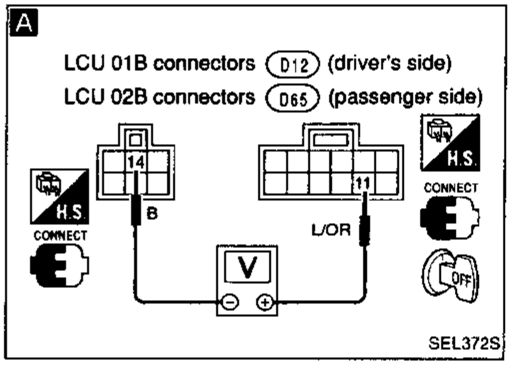
Check keyhole illumination.

NG → Replace keyhole illumination.

OK ↓

Repair or replace harness between LCU01A or 02A and keyhole illumination.





DIAGNOSTIC PROCEDURE 10

SYMPTOM: Door keyhole illuminations on both sides (driver side and passenger side) do not come on.

A

DOOR OUTSIDE HANDLE SWITCH INPUT SIGNAL CHECK

See "D/HNDL SW" in "Data Monitor" mode.
When driver side door outside handle is pulled,
D/HNDL SW-DR ON
When driver side door outside handle is released,
D/HNDL SW-DR OFF
When passenger side door outside handle is pulled,
D/HNDL SW-AS ON
When passenger side door outside handle is released,
D/HNDL SW-AS OFF

OR

Measure voltage between LCU01B terminals ⑪ and ⑭ (driver side) and then LCU02B terminals ⑪ and ⑭ (passenger side).

Condition of door outside handle on each side	Voltage [V]
Handle is pulled	0
Handle is released	Approx. 5

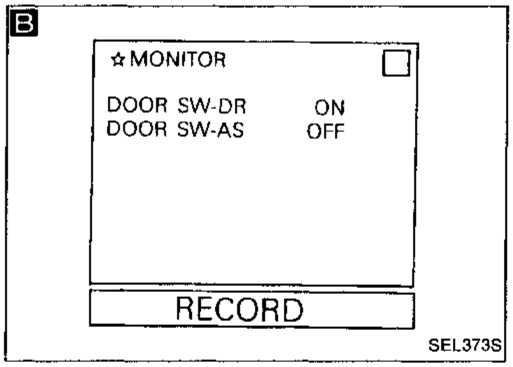
NG → Check door outside handle switch.

- NG → Replace door outside handle switch.
- OK → Check harness continuity between LCU01B or 02B and door outside handle switch.
  - NG → Repair harness.
  - OK → Replace LCU01B or 02B.

OK ↓

Ⓐ

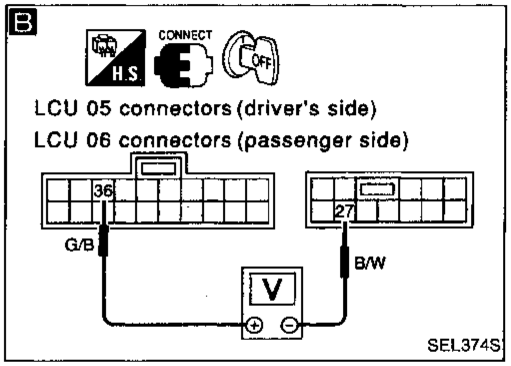
Trouble Diagnoses (Cont'd)



☆MONITOR ☐

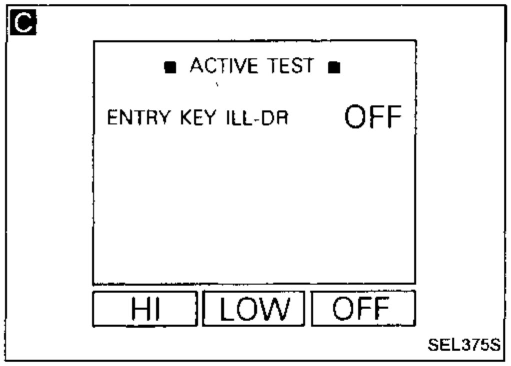
DOOR SW-DR ON
DOOR SW-AS OFF

SEL373S



LCU 05 connectors (driver's side)
LCU 06 connectors (passenger side)

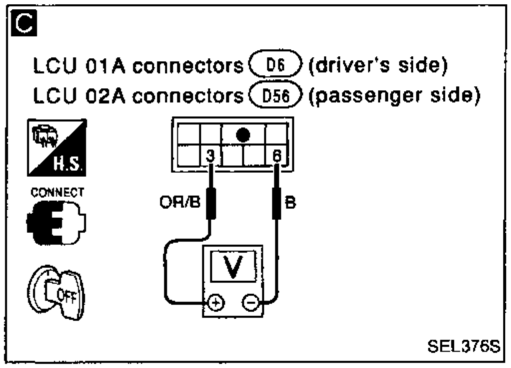
SEL374S



■ ACTIVE TEST ■

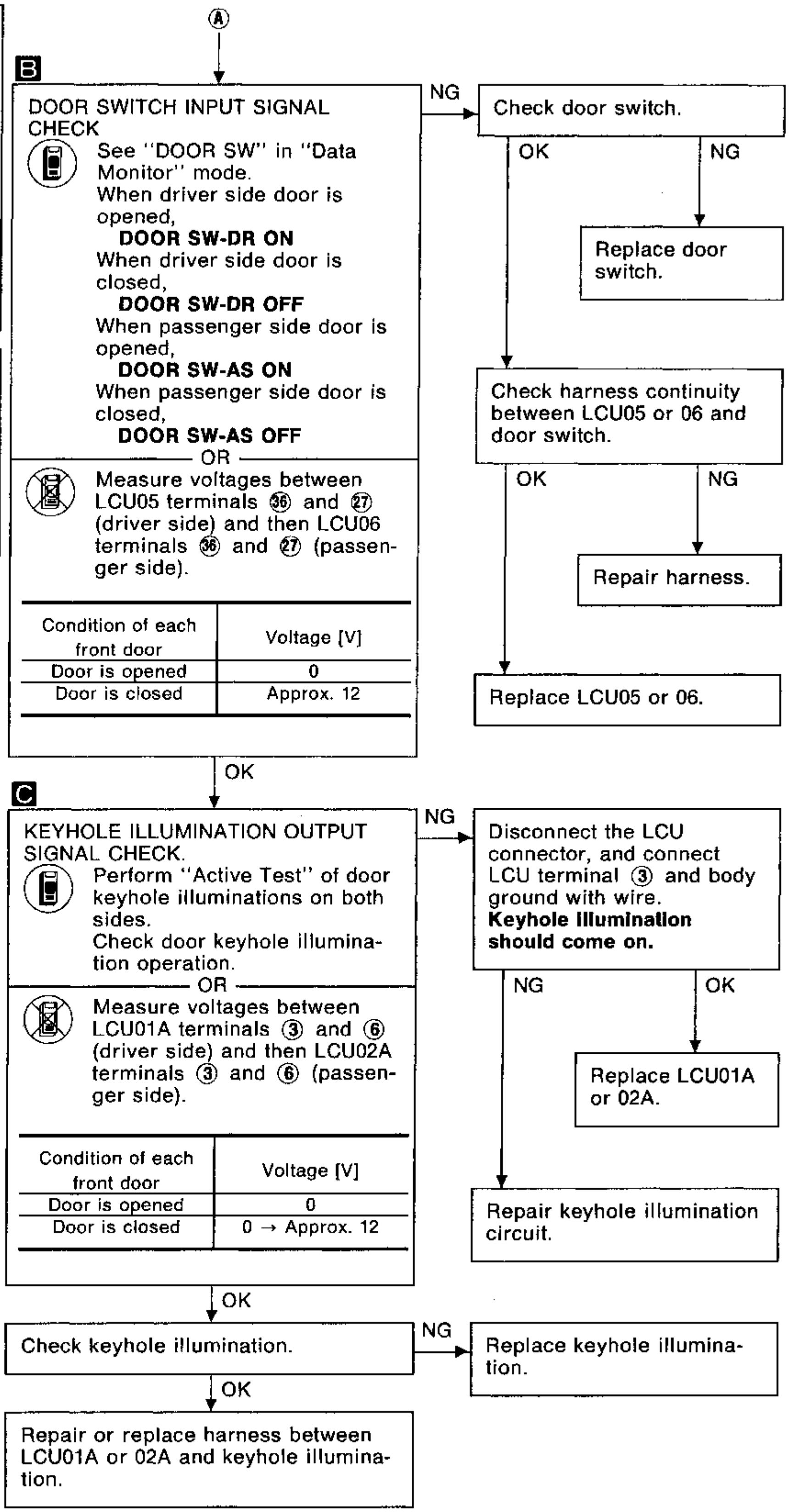
ENTRY KEY ILL-DR OFF

SEL375S



LCU 01A connectors (D6) (driver's side)
LCU 02A connectors (D56) (passenger side)

SEL376S



Ⓐ

B DOOR SWITCH INPUT SIGNAL CHECK

See "DOOR SW" in "Data Monitor" mode.
When driver side door is opened,
DOOR SW-DR ON
When driver side door is closed,
DOOR SW-DR OFF
When passenger side door is opened,
DOOR SW-AS ON
When passenger side door is closed,
DOOR SW-AS OFF

— OR —

Measure voltages between LCU05 terminals ㊱ and ㉗ (driver side) and then LCU06 terminals ㊱ and ㉗ (passenger side).

Condition of each front door	Voltage [V]
Door is opened	0
Door is closed	Approx. 12

NG → Check door switch.
- OK → Check harness continuity between LCU05 or 06 and door switch.
  - OK → Replace LCU05 or 06.
  - NG → Repair harness.
- NG → Replace door switch.

OK ↓

C KEYHOLE ILLUMINATION OUTPUT SIGNAL CHECK.

Perform "Active Test" of door keyhole illuminations on both sides.
Check door keyhole illumination operation.

— OR —

Measure voltages between LCU01A terminals ③ and ⑥ (driver side) and then LCU02A terminals ③ and ⑥ (passenger side).

Condition of each front door	Voltage [V]
Door is opened	0
Door is closed	0 → Approx. 12

NG → Disconnect the LCU connector, and connect LCU terminal ③ and body ground with wire. **Keyhole illumination should come on.**
- NG → Repair keyhole illumination circuit.
- OK → Replace LCU01A or 02A.

OK ↓

Check keyhole illumination.

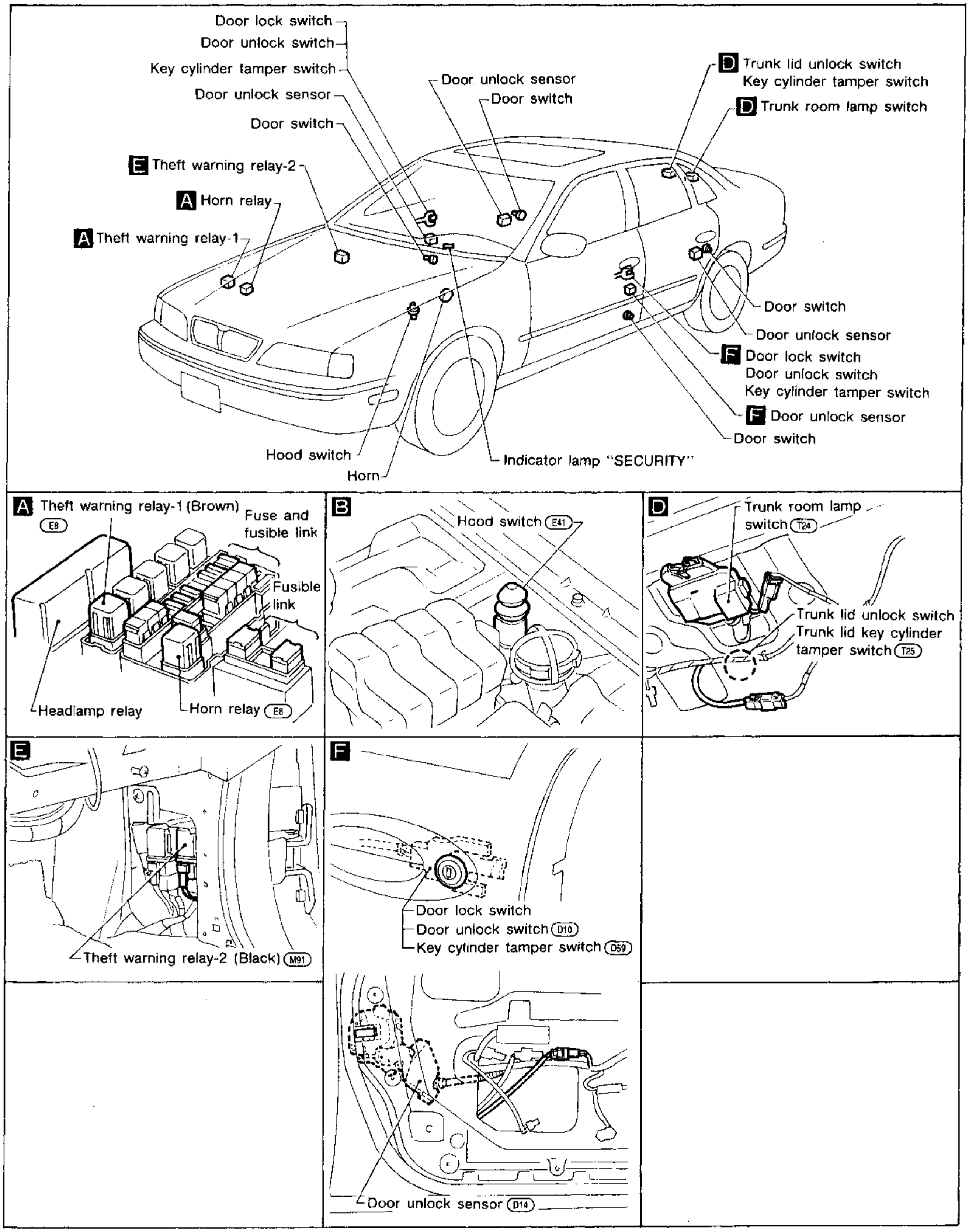
NG → Replace keyhole illumination.

OK ↓

Repair or replace harness between LCU01A or 02A and keyhole illumination.

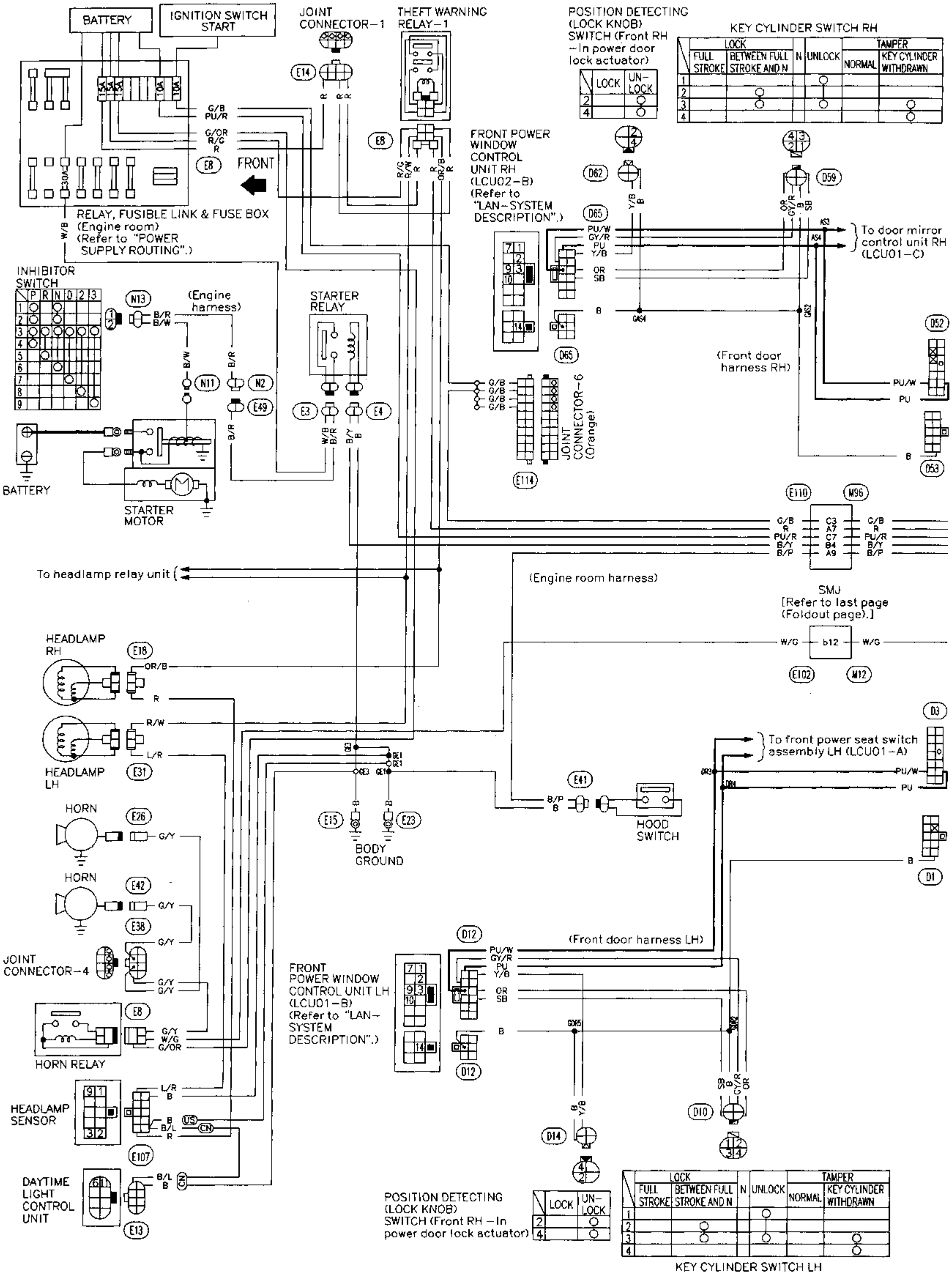
NOTE

Component Parts and Harness Connector Location

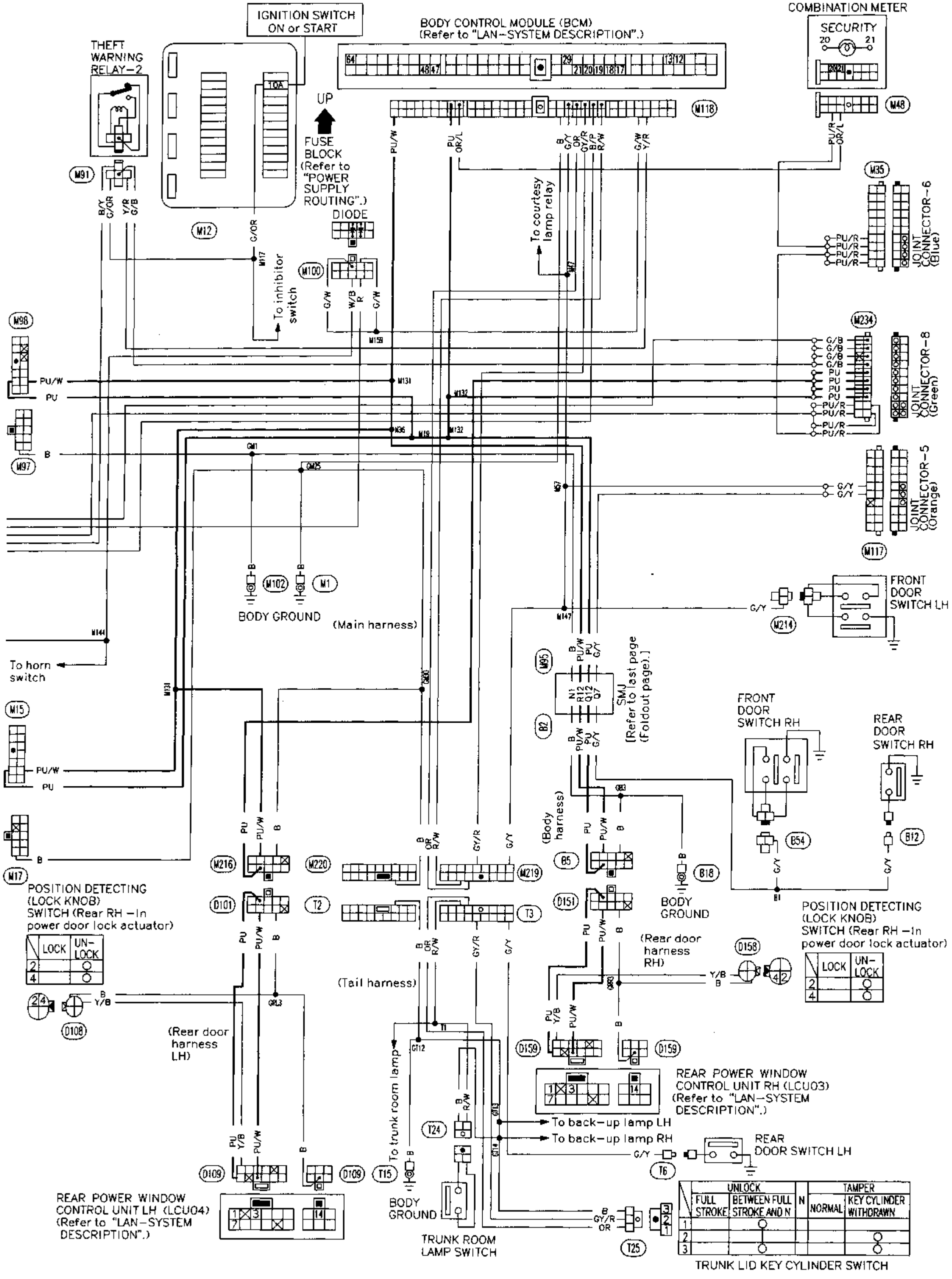


MEL805D

Wiring Diagram

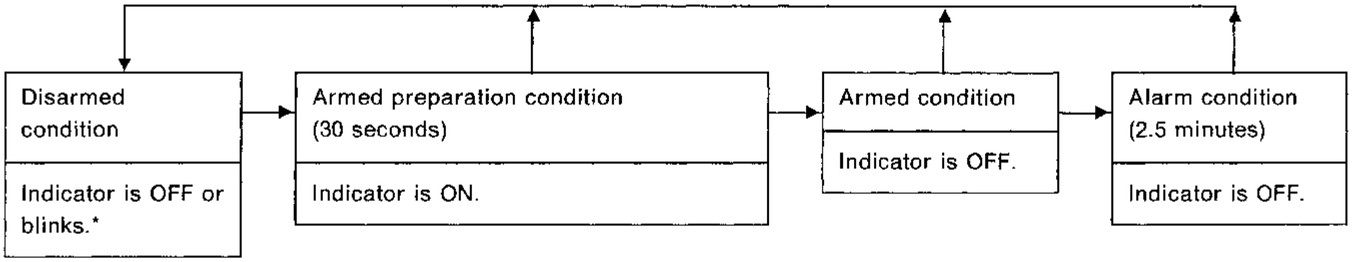


Wiring Diagram (Cont'd)



Description

1. OPERATION FLOW



* Indicator blinks when a door, hood, or trunk lid is open.

2. SETTING OF THE THEFT WARNING SYSTEM

Setting conditions

(1) Close all doors.
(2) Close hood and trunk lid.
(3) Remove ignition key out of key cylinder.

Setting operation

When any of the following operations (a), (b) or (c) is performed, the theft warning indicator lamp will be ON or OFF as shown below.

(a) Lock driver's or passenger's door using the key. (All doors are locked by power door lock operation.)
(b) Lock all doors using the multi remote control system.
(c) Lock one door without using the key with other doors locked.

Elapsed time after operation	Indicator lamp
Within about 30 seconds	ON
After about 30 seconds	OFF

3. CANCELING OF THE THEFT WARNING SYSTEM IN THE SET CONDITION

When any of the following operation (a), (b), (c) or (d) is performed, the theft warning is canceled.

(a) Unlock driver's or passenger's door using the key.
(b) Unlock all doors using the multi remote control system.
(c) Insert the ignition key in the key cylinder and turn it to the ACC or ON position.
(d) Unlock the trunk lid with the key.
(The theft warning system is temporarily canceled only while the trunk lid is open. After the trunk lid is closed, the system is reset.)

4. CHECK OF THE THEFT WARNING SYSTEM OPERATION

Check if the security indicator is OFF.

When any of the following operation (a) or (b) is performed, system sounds the horns and the theft warning horn and flashes the headlamps for about 2.5 minutes for alert purposes. At the same time, the system disconnects the starter motor circuit.

(a) Open the engine hood (trunk lid) using the engine hood (trunk lid) opener.
(b) Unlock and open any of the doors without key operation.

5. CANCELING OF THE THEFT WARNING SYSTEM IN OPERATING CONDITION

The theft warning operation can be canceled when any of the following conditions are met.

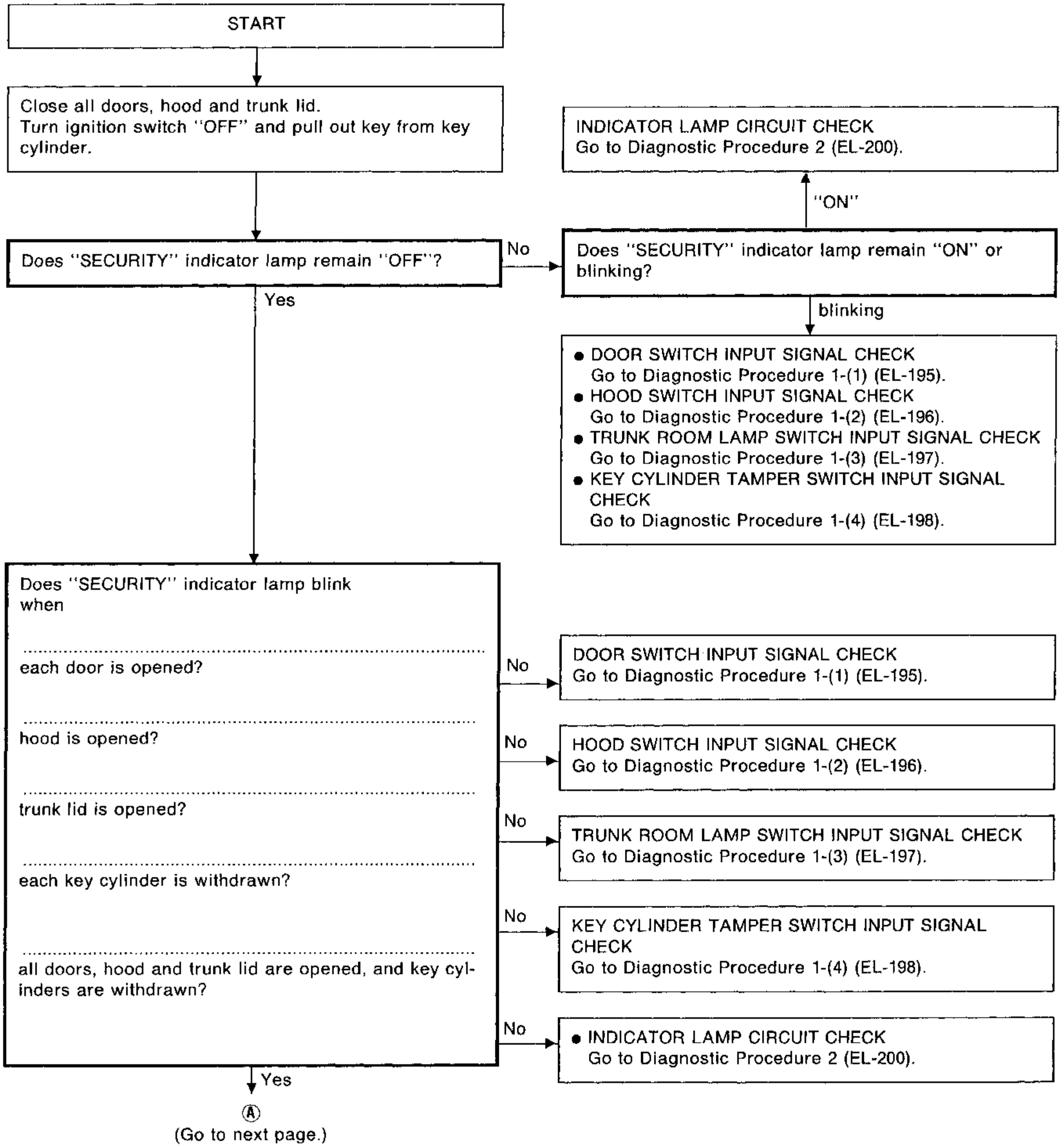
(a) Unlock driver's, passenger's door or trunk using the key.
(b) Unlock doors using the multi remote control system.

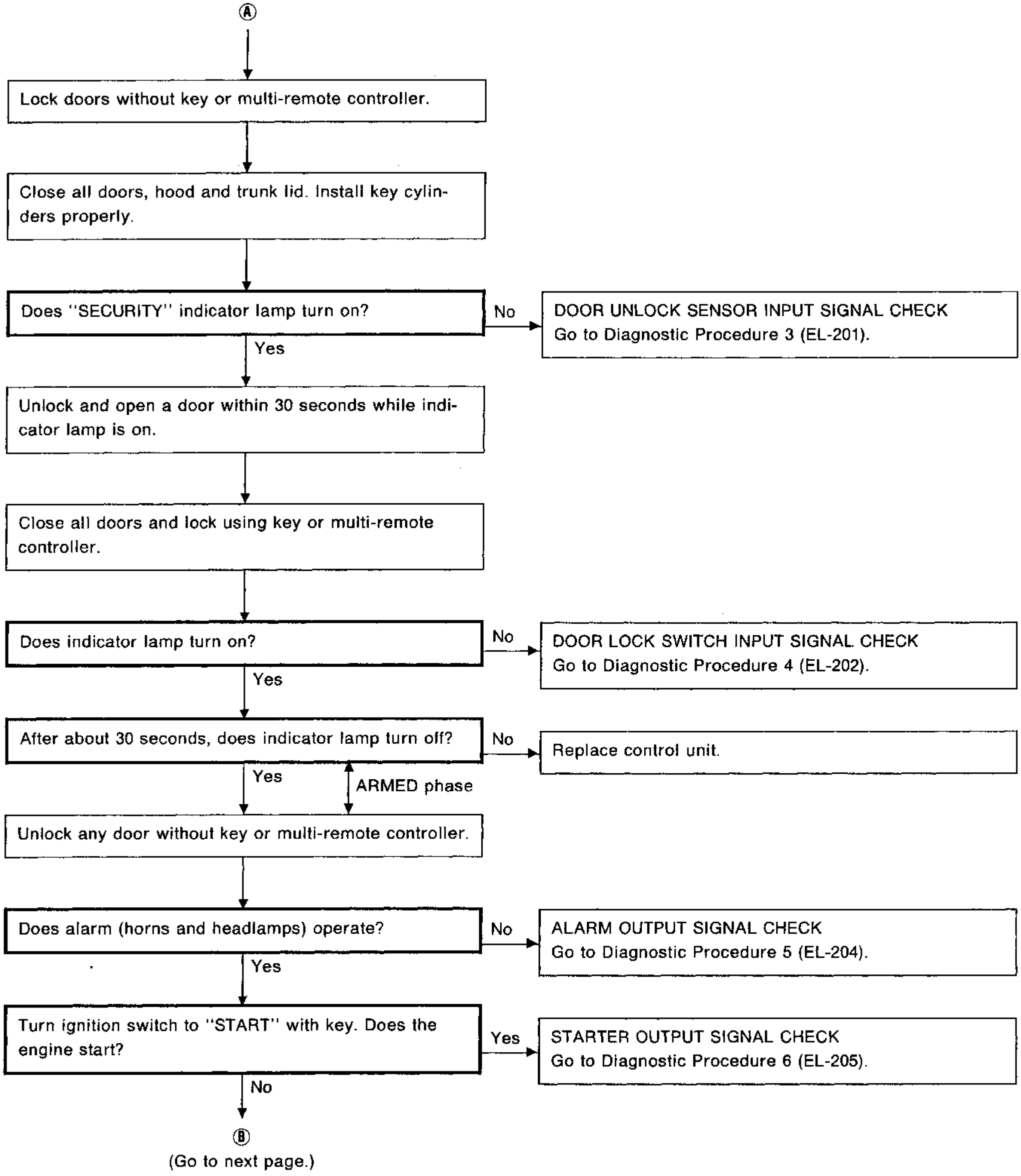
Trouble Diagnoses

Before starting with the following "SYSTEM OPERATION CHECK", be sure to perform "LAN Communication Diagnosis" (EL-100).

SYSTEM OPERATION CHECK

If ignition switch is turned to "ACC" at a step between START and ARMED or in the ARMED phase shown in this flow chart, the system operation is canceled.





Ⓐ

Lock doors without key or multi-remote controller.

Close all doors, hood and trunk lid. Install key cylinders properly.

Does "SECURITY" indicator lamp turn on?

No → DOOR UNLOCK SENSOR INPUT SIGNAL CHECK
Go to Diagnostic Procedure 3 (EL-201).

Yes

Unlock and open a door within 30 seconds while indicator lamp is on.

Close all doors and lock using key or multi-remote controller.

Does indicator lamp turn on?

No → DOOR LOCK SWITCH INPUT SIGNAL CHECK
Go to Diagnostic Procedure 4 (EL-202).

Yes

After about 30 seconds, does indicator lamp turn off?

No → Replace control unit.

Yes

ARMED phase

Unlock any door without key or multi-remote controller.

Does alarm (horns and headlamps) operate?

No → ALARM OUTPUT SIGNAL CHECK
Go to Diagnostic Procedure 5 (EL-204).

Yes

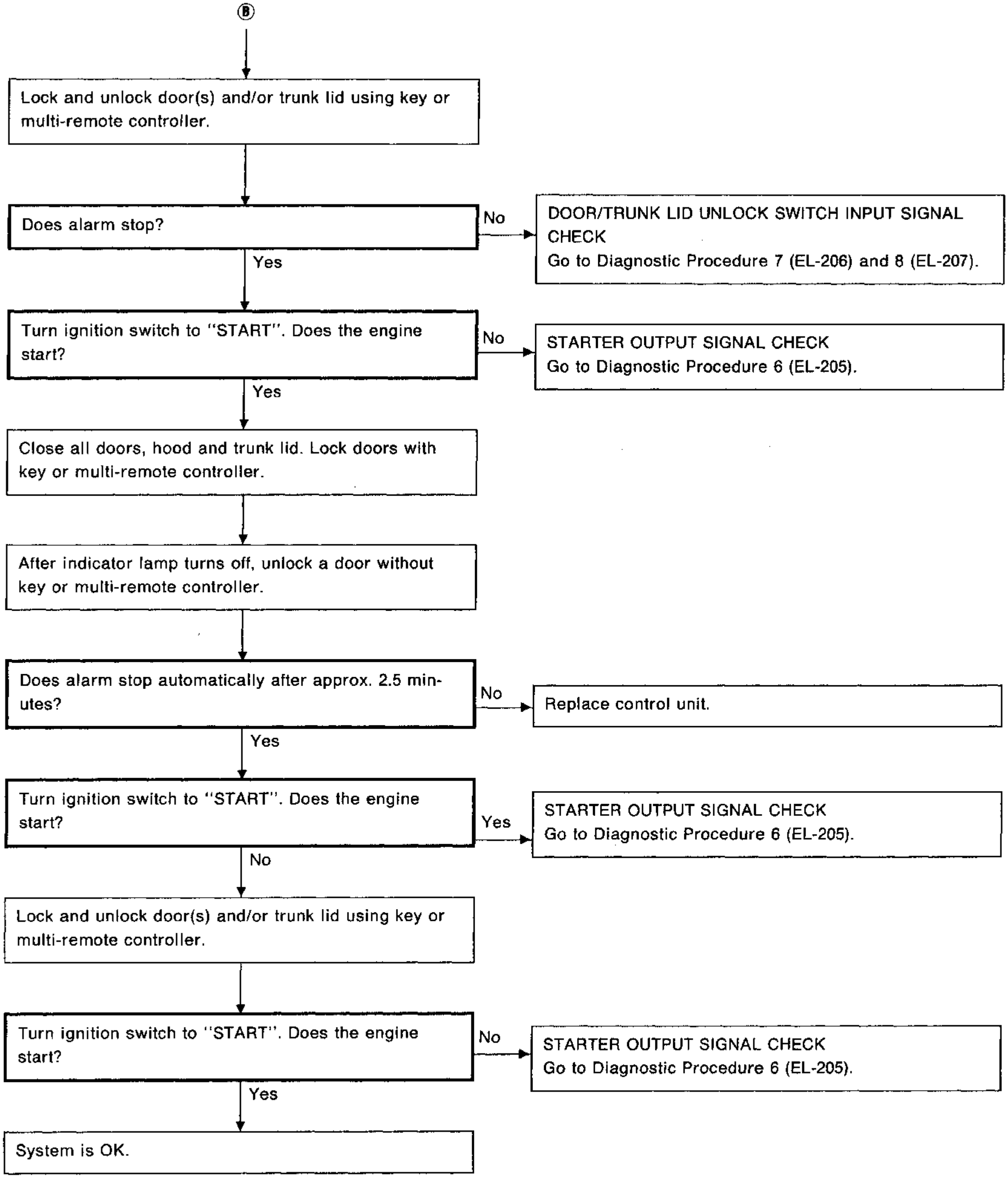
Turn ignition switch to "START" with key. Does the engine start?

Yes → STARTER OUTPUT SIGNAL CHECK
Go to Diagnostic Procedure 6 (EL-205).

No

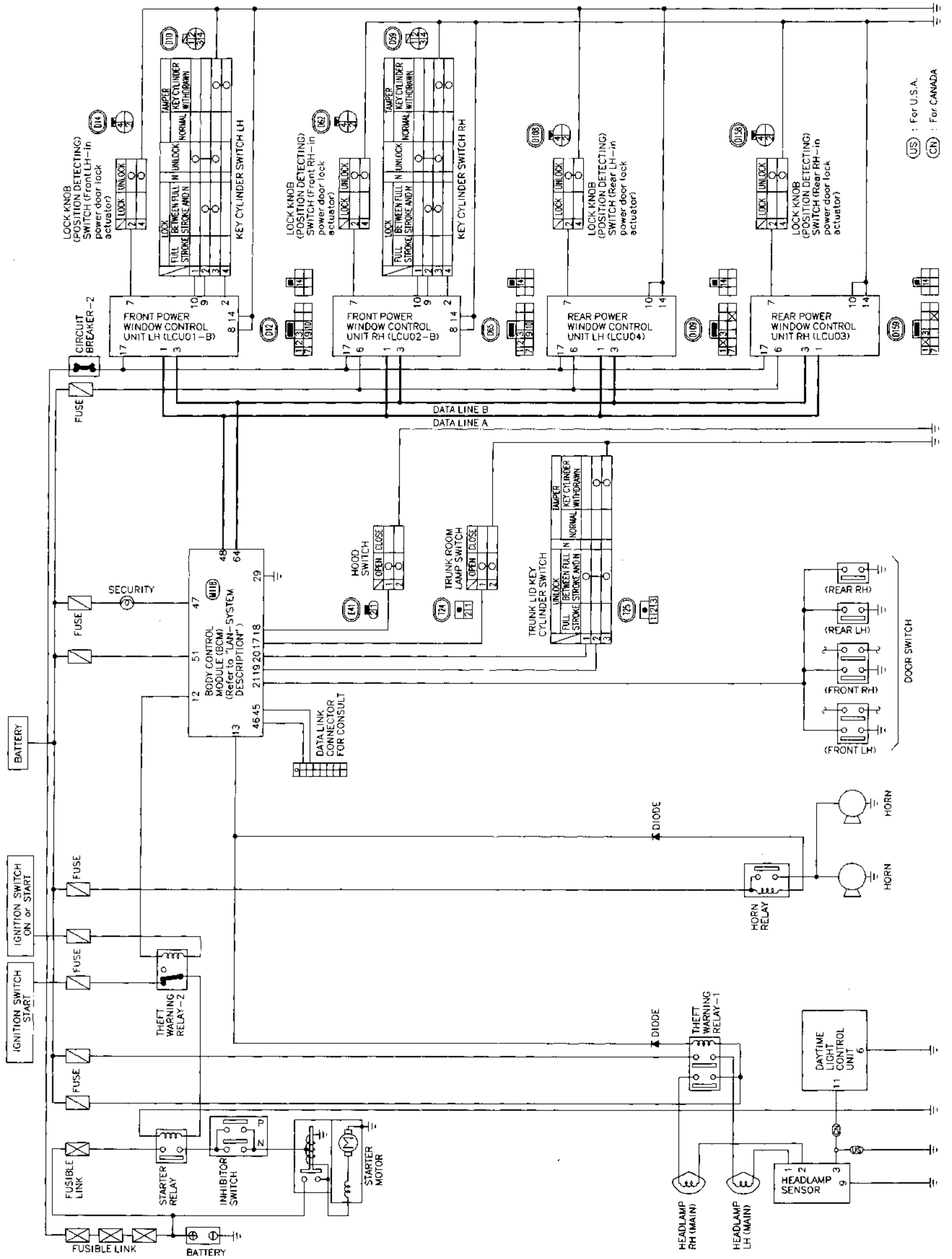
Ⓑ

(Go to next page.)



GI
MA
EM
LC
EF & EC
FE
AT
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

CIRCUIT DIAGRAM FOR QUICK PINPOINT CHECK



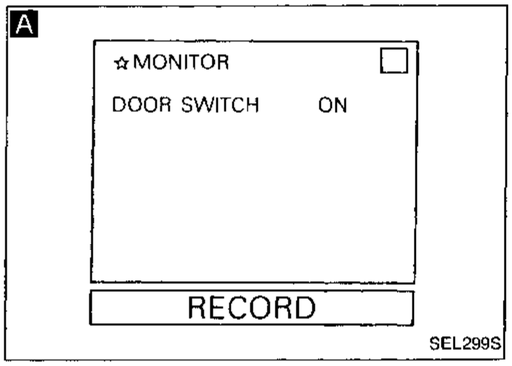
MEL812D

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

SYMPTOM:
- **Indicator lamp does not blink.**
- **Indicator lamp remains blinking.**

Diagnostic procedure 1-(1)

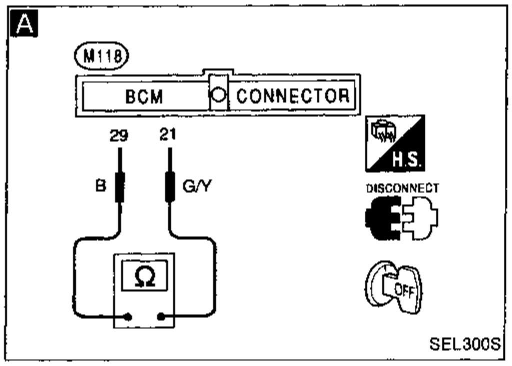


☆MONITOR ☐

DOOR SWITCH ON

RECORD

SEL299S



SEL300S

A

DOOR SWITCH INPUT SIGNAL CHECK

See "DOOR SWITCH" in "Data Monitor" mode.
When all doors are closed,
DOOR SWITCH OFF
When at least one door is open,
DOOR SWITCH ON

— OR —

1. Disconnect BCM connector.
2. Check continuity between BCM terminals ㉑ and ㉙.

Condition	Continuity
All doors closed	No
At least one door open	Yes

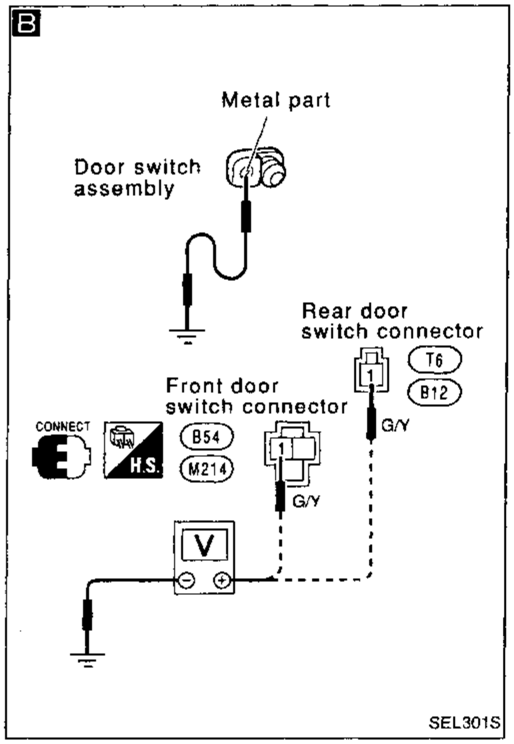
OK → Go to Diagnostic Procedure 2. (EL-200)

NG ↓

Check door switch. Refer to "Electrical Components Inspection". (EL-208)

NG → Replace door switch.

OK ↓



SEL301S

B

DOOR SWITCH CIRCUIT CHECK

1. Remove door switch assembly.
2. Connect metal part of door switch assembly with body ground.
3. Check voltage between door switch connector terminal ① and body ground.

Condition	Voltage [V]
Door switch pushed	Approx. 12
Door switch released	Approx. 0

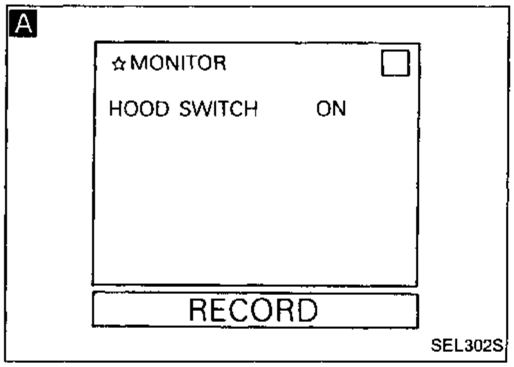
NG → Repair harness or connectors.

OK ↓

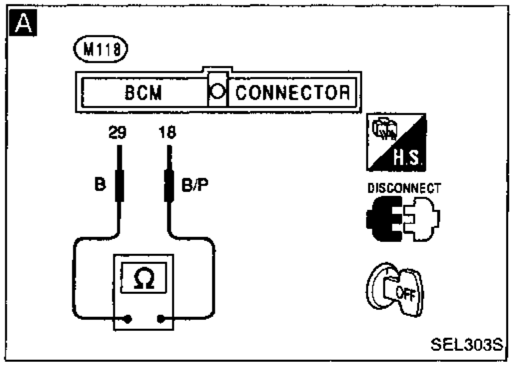
Perform LAN communication check again. (Refer to EL-102.)

Trouble Diagnoses (Cont'd)

Diagnostic procedure 1-(2)



SEL302S



SEL303S

A

HOOD SWITCH INPUT SIGNAL CHECK

See "HOOD SWITCH" in "Data Monitor" mode.
When hood is open,
HOOD SWITCH ON
When hood is closed,
HOOD SWITCH OFF

— OR —

1. Disconnect BCM connector.
2. Check continuity between BCM terminals ⑱ and ㉙.

Condition	Continuity
Hood open	Yes
Hood closed	No

OK → Go to Diagnostic Procedure 2. (EL-200)

NG ↓

Check fitting condition of hood and hood switch.

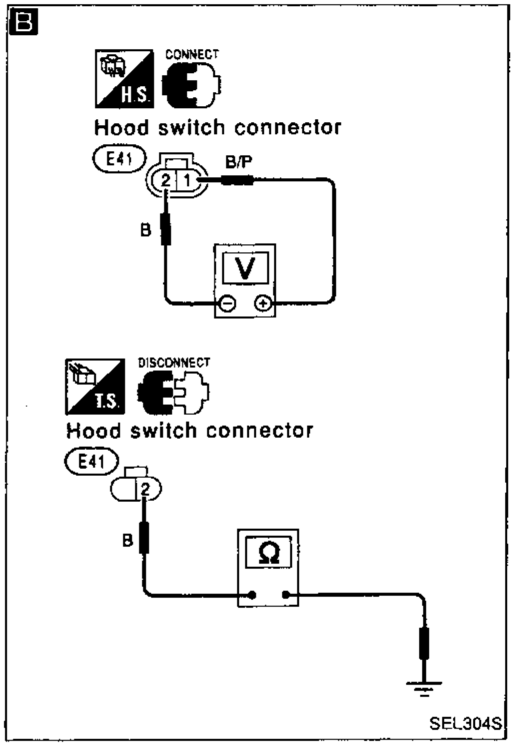
NG → Adjust installation of hood switch or hood.

OK ↓

Check hood switch. Refer to "Electrical Components Inspection". (EL-208)

NG → Replace hood switch.

OK ↓



SEL304S

B

HOOD SWITCH CIRCUIT CHECK

1. Remove hood switch assembly.
2. Check voltage between hood switch connector terminals ① and ②.

Condition of hood switch	Voltage [V]
Pushed	Approx. 0
Released	Approx. 12

3. Disconnect hood switch connector.
4. Check harness continuity between hood switch terminal ② and body ground.
Continuity should exist.

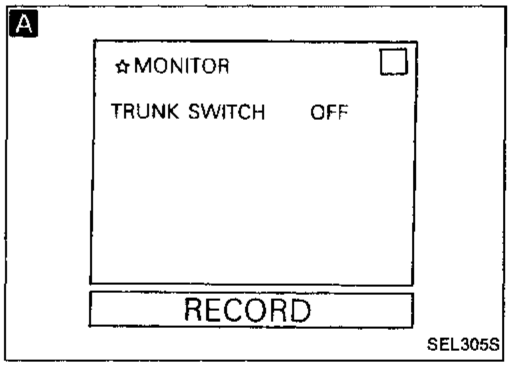
NG → Repair harness or connectors.

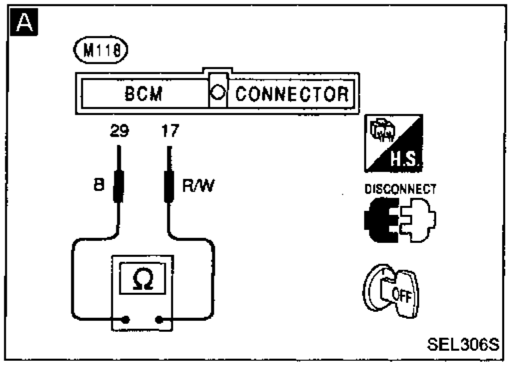
OK ↓

Perform LAN communication check again. (Refer to EL-102.)

Trouble Diagnoses (Cont'd)

Diagnostic procedure 1-(3)





A

TRUNK ROOM LAMP SWITCH INPUT SIGNAL CHECK

See "TRUNK SWITCH" in "Data Monitor" mode.
When trunk lid is open,
TRUNK SWITCH ON
When trunk lid is closed,
TRUNK SWITCH OFF

OR

1. Disconnect BCM connector.
2. Check continuity between BCM terminals ⑰ and ㉙.

Condition	Continuity
Trunk lid open	Yes
Trunk lid closed	No

OK → Go to Diagnostic Procedure 2. (EL-200)

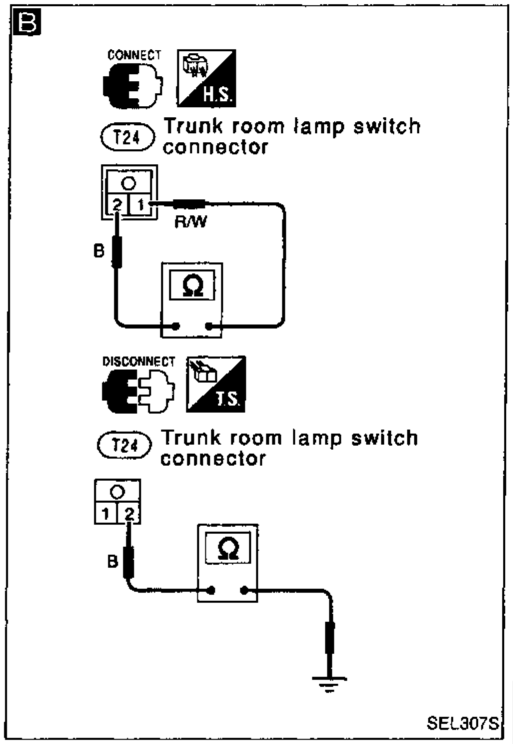
NG ↓

Does trunk room lamp come on?

No → Check trunk room lamp switch. Refer to "Electrical Components Inspection". (EL-208)

- NG → Replace trunk room lamp switch.
- OK → go to B

Yes ↓



B

TRUNK ROOM LAMP SWITCH CIRCUIT CHECK

1. Remove trunk room lamp switch assembly.
2. Check voltage between trunk room lamp switch connector terminals ① and ②.

Condition of trunk lid	Voltage [V]
Closed	Approx. 0
Open	Approx. 5

3. Disconnect trunk room lamp switch connector.
4. Check continuity between trunk room lamp switch connector terminal ② and body ground. **Continuity should exist.**

NG → Repair harness or connectors.

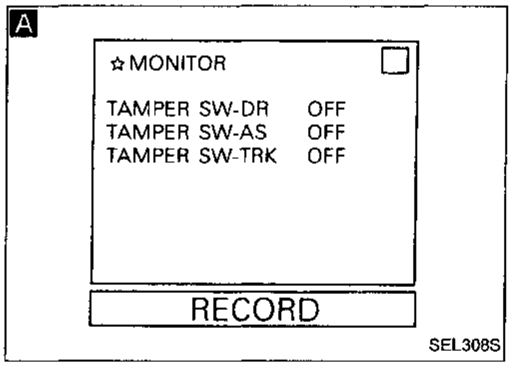
OK ↓

Perform LAN communication check again. (Refer to EL-102.)

GI
MA
EM
LC
EF & EC
FE
AT
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

Trouble Diagnoses (Cont'd)

Diagnostic procedure 1-(4)

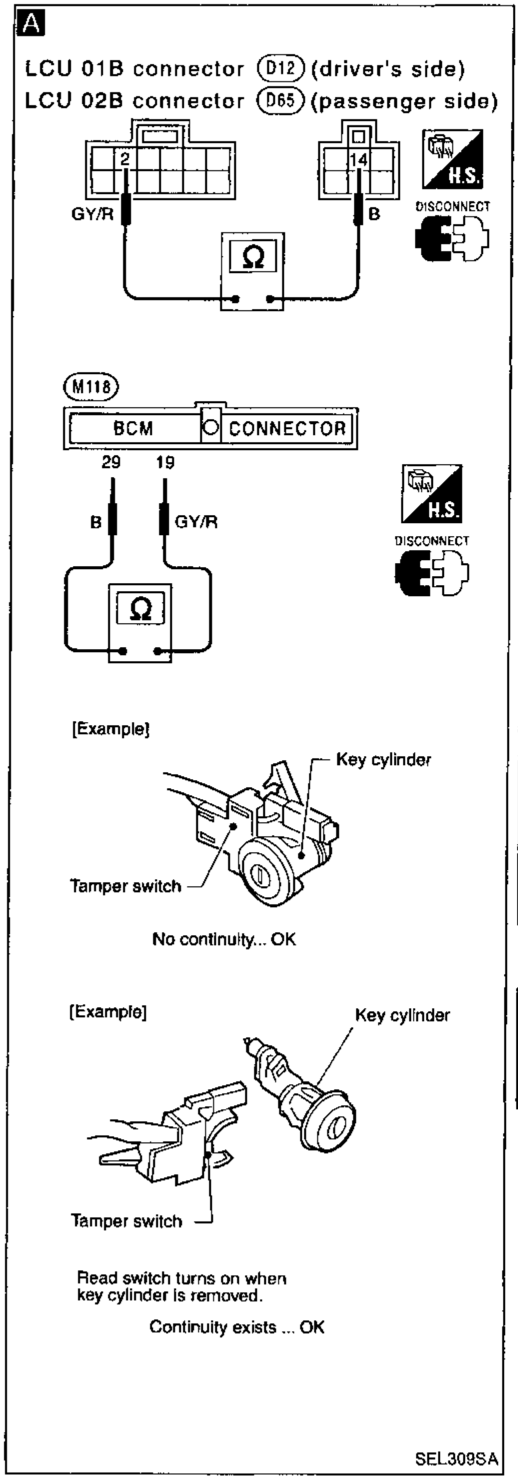


☆MONITOR ☐

TAMPER SW-DR OFF
TAMPER SW-AS OFF
TAMPER SW-TRK OFF

RECORD

SEL308S



SEL309SA

A

KEY CYLINDER TAMPER SWITCH INPUT SIGNAL CHECK

See "TAMPER SW" in "Data Monitor" mode.

When driver side key cylinder is removed,
TAMPER SW-DR ON
When driver side key cylinder is installed,
TAMPER SW-DR OFF
When passenger side key cylinder is removed,
TAMPER SW-AS ON
When passenger side key cylinder is installed,
TAMPER SW-AS OFF
When trunk lid key cylinder is removed.
TAMPER SW-TRK ON
When trunk lid key cylinder is installed.
TAMPER SW-TRK OFF

OR

1. Disconnect BCM connector, LCU01B connectors, and LCU02B connectors.
2. Check continuity between LCU01B terminals ② and ⑭ (driver side), LCU02B terminals ② and ⑭ (passenger side), and then BCM terminals ⑲ and ㉙ (trunk lid).

Condition	Continuity
Key cylinder installed	No
Key cylinder removed	Yes

OK → Go to Diagnostic Procedure 2. (EL-200)

NG

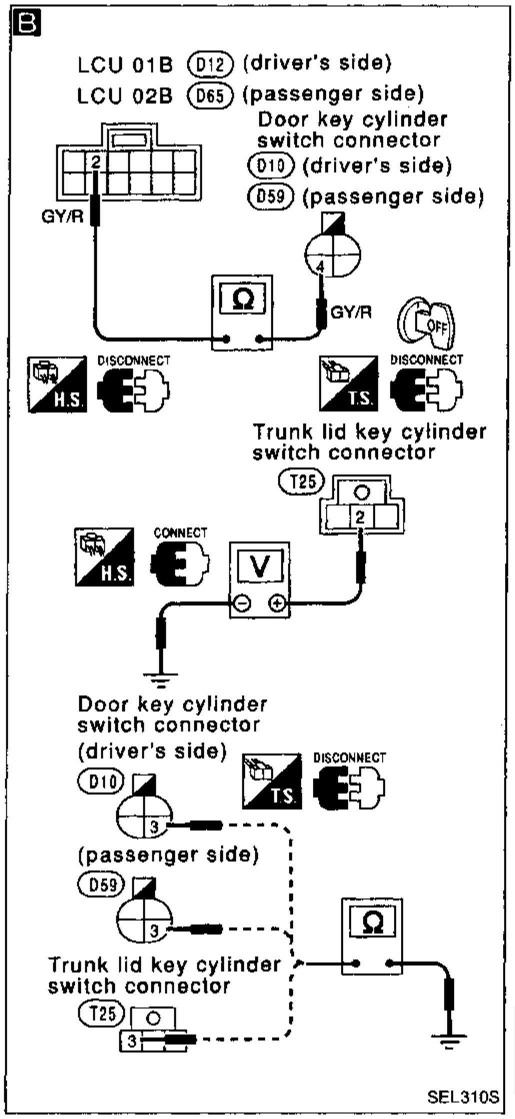
Check each key cylinder tamper switch. Refer to "Electrical Components Inspection". (EL-209)

NG → Replace key cylinder tamper switch.

OK

Ⓐ

Trouble Diagnoses (Cont'd)



Ⓐ

B

KEY CYLINDER TAMPER SWITCH CIRCUIT CHECK

1. Disconnect LCU01B connector, LCU02B connector, driver side key cylinder switch connector, and passenger side key cylinder switch connector.
2. Check harness continuity between LCU01B terminal ② and driver side key cylinder switch connector terminal ④ and then LCU02B terminal ② and passenger side key cylinder switch connector terminal ④.
   Continuity should exist.
3. Check voltage between trunk lid key cylinder switch connector terminal ② and body ground.
   Voltage should be approx. 5V.
4. Check continuity between key cylinder switch connector terminal ③ and body ground and then trunk lid key cylinder switch connector terminal ③ and body ground.
   Continuity should exist.

NG → Repair harness and connectors.

OK

Perform LAN communication check again. (Refer to EL-102.)

OK

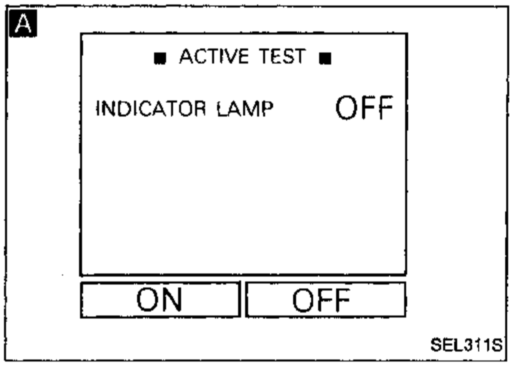
Replace BCM or LCU01B or 02B.

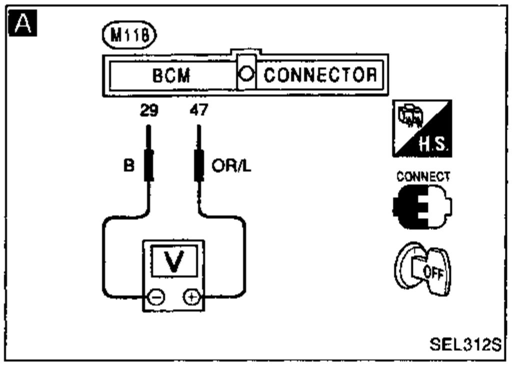
GI
MA
EM
LC
EF & EC
FE
AT
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

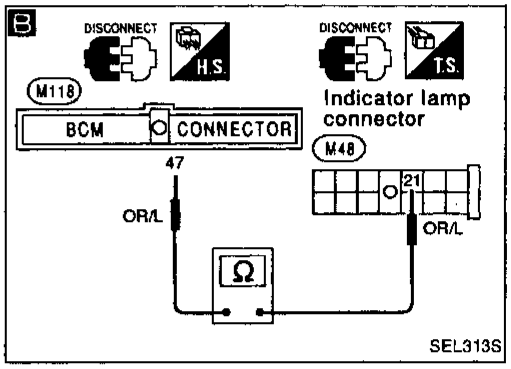
Trouble Diagnoses (Cont'd)

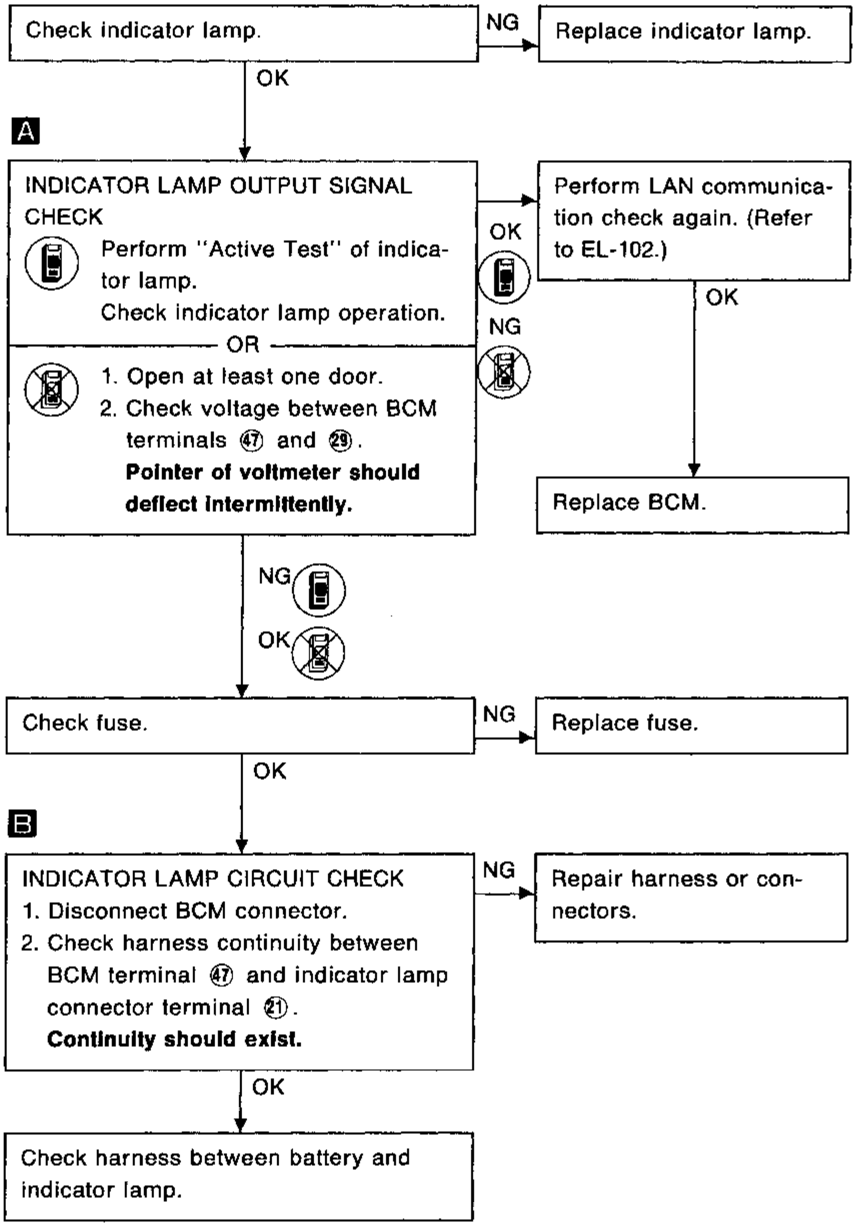
DIAGNOSTIC PROCEDURE 2

SYMPTOM: Indicator lamp does not blink.









Check indicator lamp.

NG → Replace indicator lamp.

OK ↓

A

INDICATOR LAMP OUTPUT SIGNAL CHECK

Perform "Active Test" of indicator lamp.
Check indicator lamp operation.

OR

1. Open at least one door.
2. Check voltage between BCM terminals ㊼ and ㉙.
   Pointer of voltmeter should deflect intermittently.

OK → Perform LAN communication check again. (Refer to EL-102.)

OK ↓ Replace BCM.

NG ↓ / OK ↓

Check fuse.

NG → Replace fuse.

OK ↓

B

INDICATOR LAMP CIRCUIT CHECK

1. Disconnect BCM connector.
2. Check harness continuity between BCM terminal ㊼ and indicator lamp connector terminal ㉑.
   Continuity should exist.

NG → Repair harness or connectors.

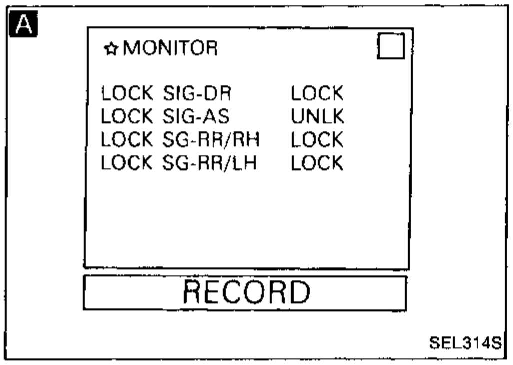
OK ↓

Check harness between battery and indicator lamp.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

SYMPTOM: Indicator lamp does not come on.

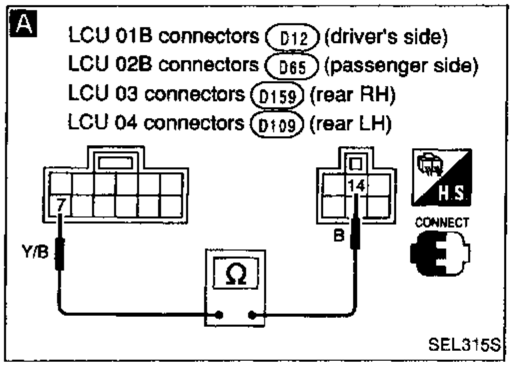


☆MONITOR ☐

LOCK SIG-DR	LOCK
LOCK SIG-AS	UNLK
LOCK SG-RR/RH	LOCK
LOCK SG-RR/LH	LOCK

RECORD

SEL314S



SEL315S

A

POSITION DETECTING SWITCH INPUT SIGNAL CHECK

See "LOCK SIG (SG)" in "Data Monitor" mode for all doors.

When door is locked

LOCK SIG (SG) LOCK

When door is unlocked

LOCK SIG (SG) UNLK

— OR —

Check continuity between terminals ⑦ and ⑭ of LCU01B, LCU02B, LCU03 and LCU04.

Condition	Continuity
Door locked	No
Door unlocked	Yes

OK → Go to Diagnostic Procedure 4. (EL-202)

OK ↓

Perform LAN communication check again. (Refer to EL-102.)

OK ↓

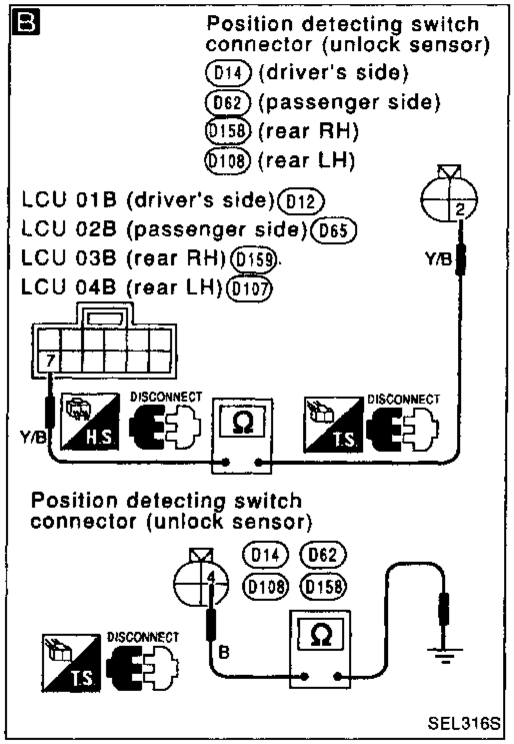
Replace BCM.

NG ↓

Check position detecting switch. Refer to "Electrical Components Inspection". (EL-209)

NG → Replace door lock actuator.

OK ↓



SEL316S

B

POSITION DETECTING SWITCH CIRCUIT CHECK

1. Check harness continuity between terminal ⑦ of LCU01B, LCU02B, LCU03 and LCU04 and terminal ② of each door lock actuator.
2. Check harness continuity between terminal ④ of each door lock actuator and body ground.

Continuity should exist.

NG → Repair harness or connectors.

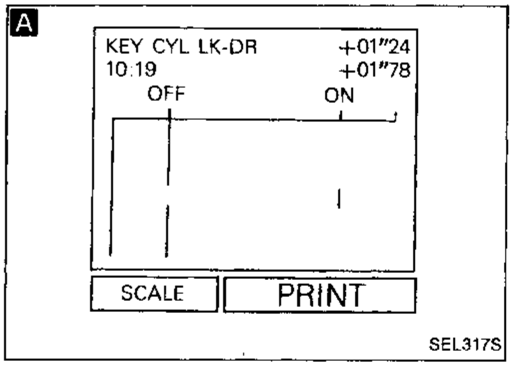
OK ↓

Replace LCU01B, 02B, 03, or 04.

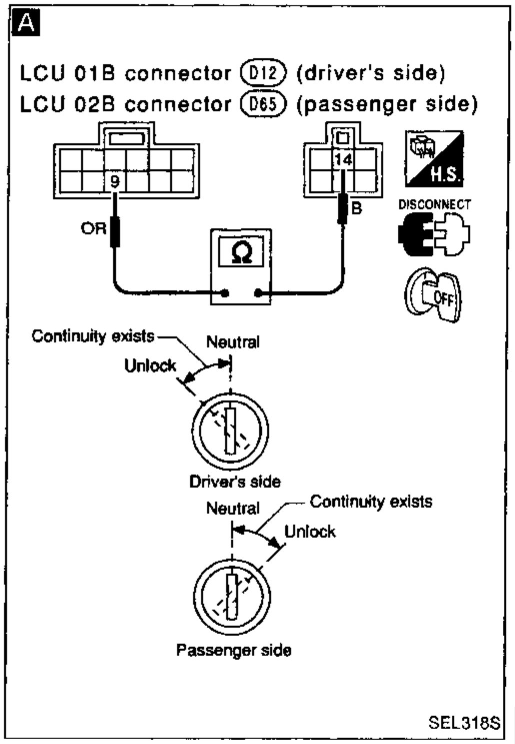
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

SYMPTOM: Indicator lamp does not come on.



SEL317S



SEL318S

A

DOOR LOCK KEY CYLINDER SWITCH INPUT SIGNAL CHECK (LOCK SIGNAL)

See "KEY CYL LK-DR (AS)" in "Data Monitor" mode for both sides.
When key is turned from Neutral to Lock position, KEY CYL LK-DR (AS) should be "ON" for a moment.

OR

Check continuity between LCU01B terminals ⑨ and ⑭ (driver side) and then LCU02B terminals ⑨ and ⑭ (passenger side).

Key position	Continuity
Neutral/lock	No
Between neutral and lock	Yes

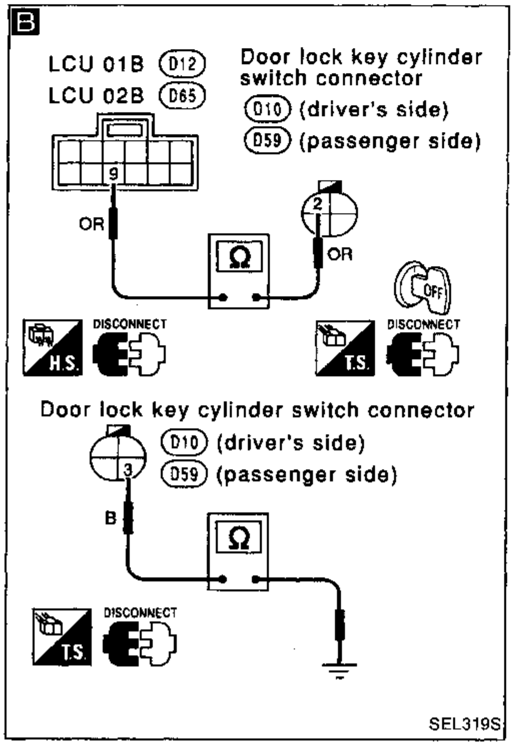
OK → Ⓐ (Go to next page.)

NG ↓

Check door lock key cylinder switch. Refer to "Electrical Components Inspection". (EL-209)

NG → Replace key cylinder switch.

OK ↓



SEL319S

B

DOOR LOCK KEY CYLINDER SWITCH CIRCUIT CHECK

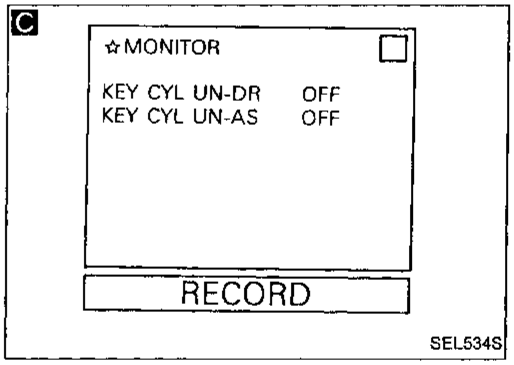
1. Check harness continuity between terminal ⑨ of LCU01B and LCU02B and door lock key cylinder switch terminal ② on each side.
2. Check continuity between door lock key cylinder switch terminal ③ on each side and body ground.
   Continuity should exist.

NG → Repair harness or connectors.

OK ↓

Replace LCU01B or 02B.

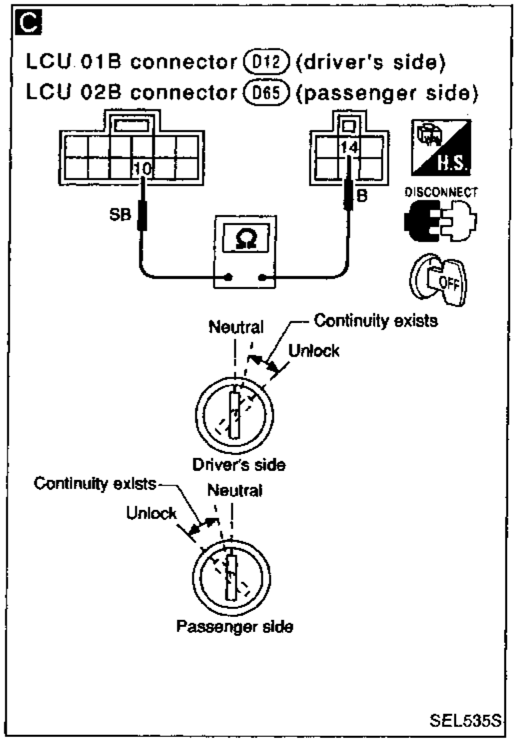
Trouble Diagnoses (Cont'd)


☆MONITOR ☐

KEY CYL UN-DR OFF
KEY CYL UN-AS OFF

RECORD

SEL534S



SEL535S

Ⓐ

C DOOR KEY CYLINDER SWITCH INPUT SIGNAL CHECK (UNLOCK SIGNAL)

See "KEY CYL UN-DR (AS)" in "Data Monitor" mode for both sides.

When key in key cylinder is on unlock side,

KEY CYL UN-DR (AS) OFF

When key in key cylinder is on neutral side,

KEY CYL UN-DR (AS) ON

OR

Check continuity between terminals ⑩ and ⑭ of LCU01B and LCU02B.

Key position	Continuity
Neutral/lock	No
Between neutral and lock	Yes

OK → Go to Diagnostic Procedure 3. (EL-201)

OK ↓

Perform LAN communication check again. (Refer to EL-102.)

OK ↓

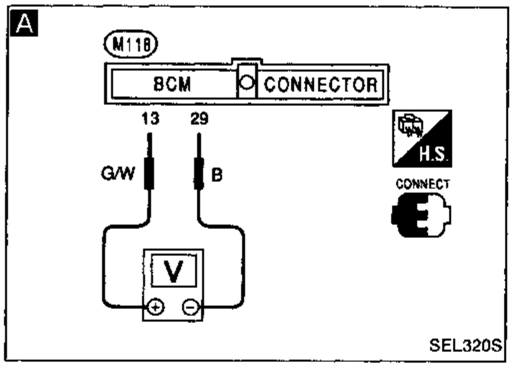
Replace BCM.

GI
MA
EM
LC
EF &
EC
FE
AT
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

SYMPTOM: Alarm does not operate.



A

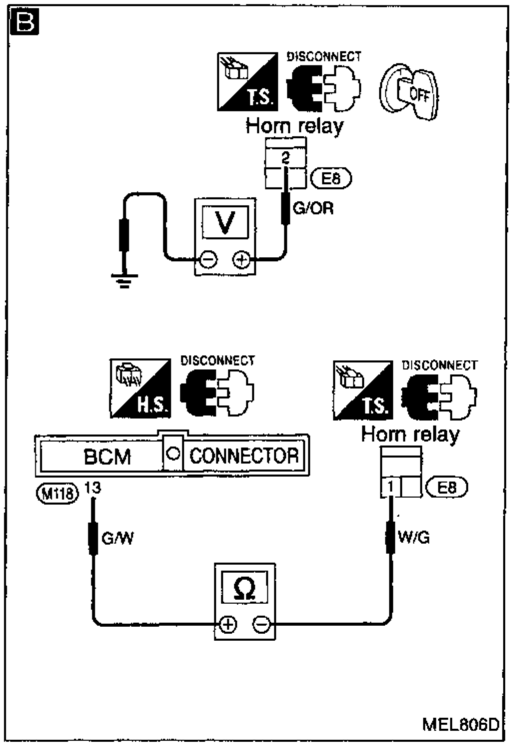
ALARM SIGNAL OUTPUT CHECK
Check voltage between BCM terminals ⑬ and ㉙

Condition	Voltmeter
Except alarm phase	12V
Alarm phase	Pointer deflects intermittently

- NG → Perform LAN communication check again. (Refer to EL-102.)
  - OK → Replace BCM.
- OK ↓

Check theft warning horn relay.

- NG → Replace theft warning horn relay.
- OK ↓



B

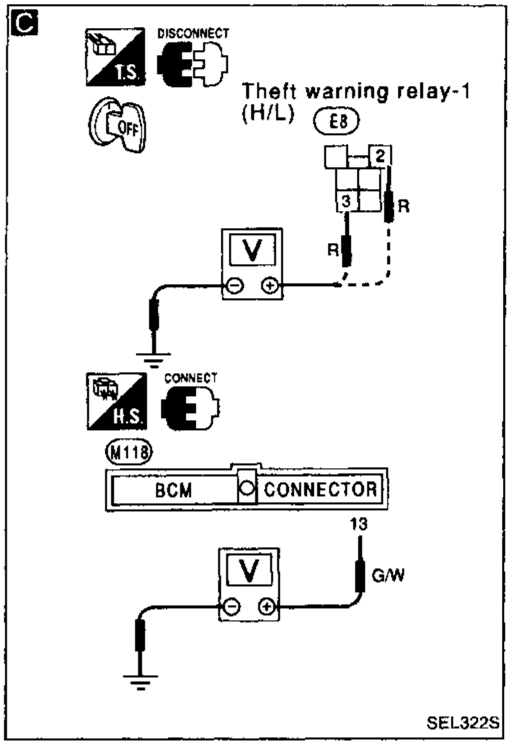
THEFT WARNING HORN CIRCUIT CHECK

1. Check if voltage across horn relay harness terminal ② and body ground is 12V.
2. Check continuity between horn relay terminal ① and BCM terminal ⑬.
   Continuity should exist.

- NG → Repair harness and connectors.
- OK ↓

Check theft warning relay-1.

- NG → Replace theft warning relay-1.
- OK ↓



C

THEFT WARNING HEADLAMP CIRCUIT CHECK

1. Disconnect theft warning relay-1 connector.
2. Check voltage between theft warning relay-1 terminal ② and body ground, and then terminal ③ and body ground.
   Voltage should be approx. 12V.
3. Connect theft warning relay-1 connector.
4. Check voltage between BCM connector terminal ⑬ and body ground.
   Voltage should be approx. 12V.

- NG → Repair harness and connectors.
- OK ↓

Do headlamps come on when lighting switch is turned "ON"?

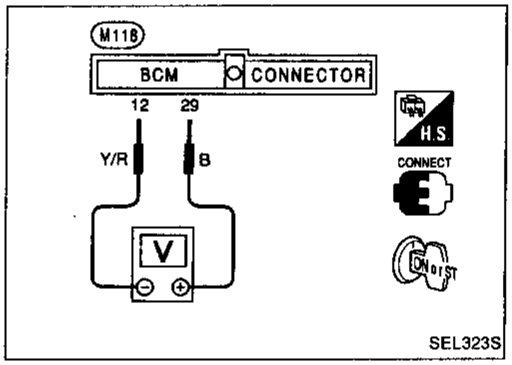
- No → Check headlamp system. Refer to "HEADLAMP". (EL-20)
- Yes ↓

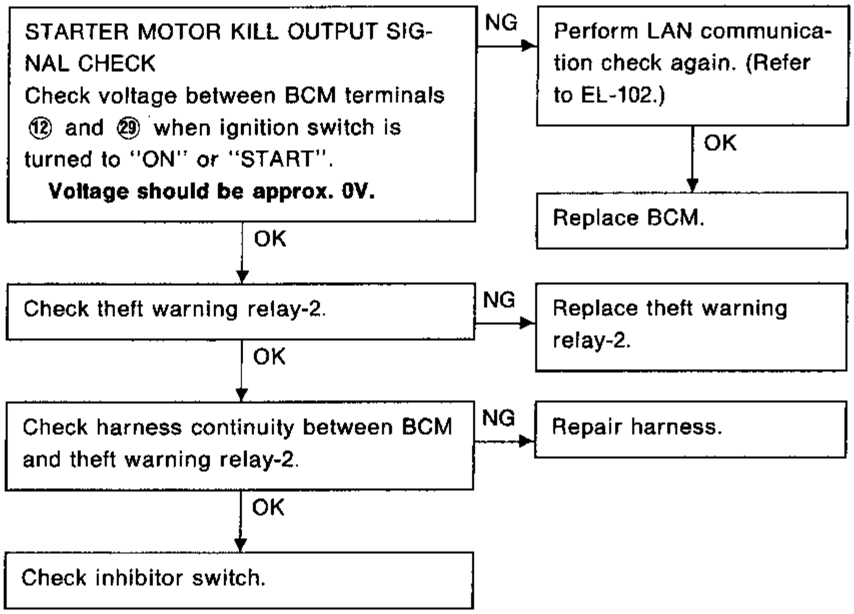
Repair harness and connectors between lamp relay and headlamps.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

SYMPTOM: Starter motor can be operated. (Starter-killed phase)





STARTER MOTOR KILL OUTPUT SIGNAL CHECK
Check voltage between BCM terminals ⑫ and ㉙ when ignition switch is turned to "ON" or "START".
Voltage should be approx. 0V.

NG → Perform LAN communication check again. (Refer to EL-102.)
OK ↓ Replace BCM.

OK ↓

Check theft warning relay-2.
NG → Replace theft warning relay-2.

OK ↓

Check harness continuity between BCM and theft warning relay-2.
NG → Repair harness.

OK ↓

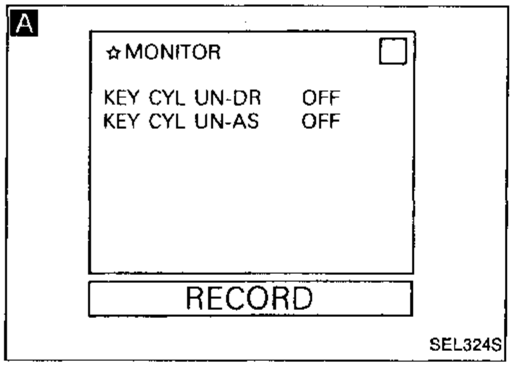
Check inhibitor switch.

GI
MA
EM
LC
EF & EC
FE
AT
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7

SYMPTOM: Alarm does not stop even if stop signal is given.

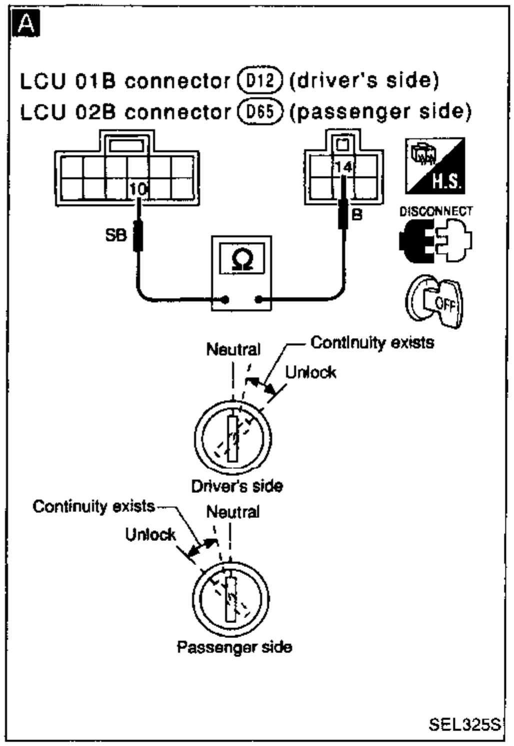


☆MONITOR ☐

KEY CYL UN-DR OFF
KEY CYL UN-AS OFF

RECORD

SEL324S



SEL325S

A

DOOR KEY CYLINDER SWITCH INPUT SIGNAL CHECK (UNLOCK SIGNAL)

See "KEY CYL UN-DR (AS)" in "Data Monitor" mode for both sides.
When key in key cylinder is on unlock side,
KEY CYL UN-DR (AS) OFF
When key in key cylinder is on neutral side,
KEY CYL UN-DR (AS) ON

OR

Check continuity between terminals ⑩ and ⑭ of LCU01B and LCU02B.

Key position	Continuity
Neutral side	No
Unlock side and unlock	Yes

OK → Perform LAN communication check again. (Refer to EL-102)

OK → Replace BCM.

NG ↓

Check door key cylinder switch. Refer to "Electrical Components Inspection". (EL-209)

NG → Replace key cylinder switch.

OK ↓

B

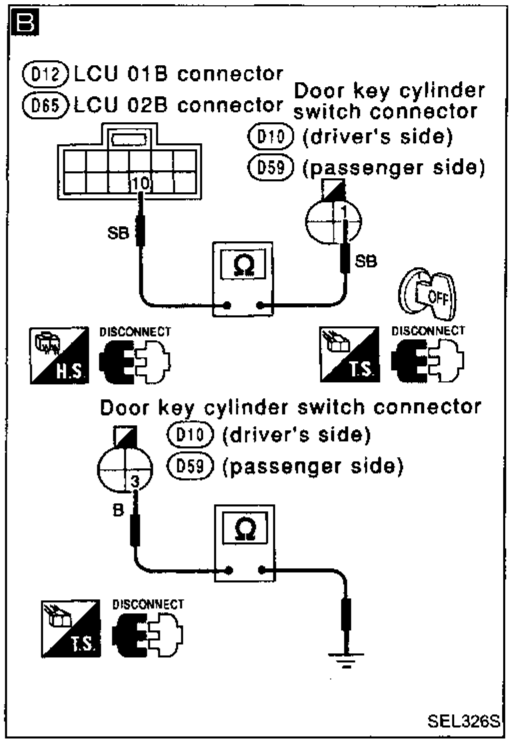
DOOR KEY CYLINDER SWITCH CIRCUIT CHECK

1. Check harness continuity between LCU01B terminal ⑩ and driver side door key cylinder switch terminal ① and then LCU02B terminal ⑩ and passenger side door key cylinder switch terminal ①.
2. Check continuity between door key cylinder switch terminal ③ on each side and body ground.
   Continuity should exist.

NG → Repair harness or connectors.

OK ↓

Replace LCU01B or 02B

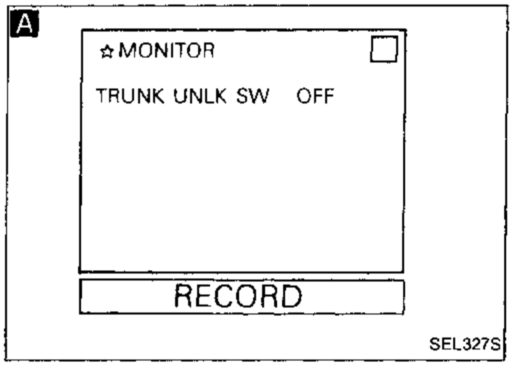


SEL326S

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 8

SYMPTOM: Alarm does not stop even if stop signal is given.

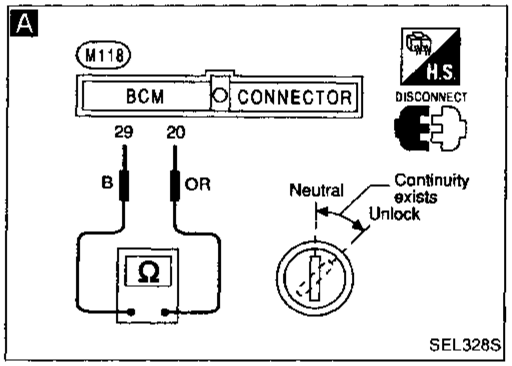

A

☆MONITOR ☐

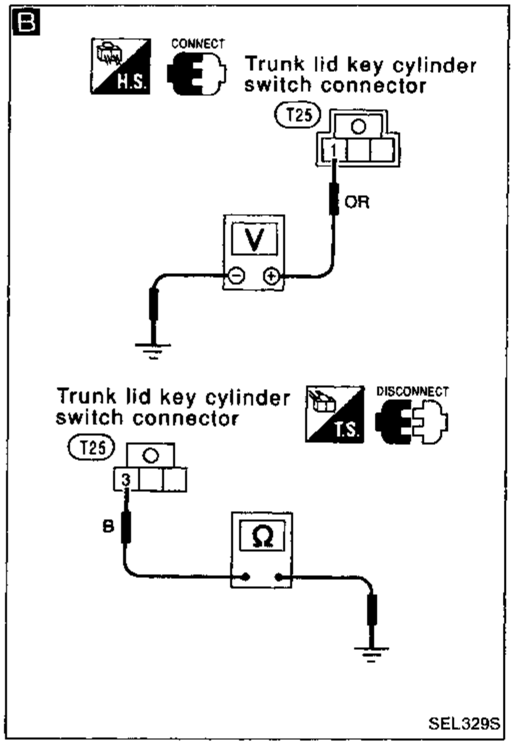
TRUNK UNLK SW OFF

RECORD

SEL327S



SEL328S



SEL329S

A

TRUNK LID KEY CYLINDER SWITCH INPUT SIGNAL CHECK (UNLOCK SIGNAL)

See "TRUNK UNLK SW" in "Data Monitor" mode

When key in key cylinder is at neutral or unlock position

TRUNK UNLK SW OFF

When key in key cylinder is between neutral and unlock

TRUNK UNLK SW ON

OR

1. Disconnect BCM connector.
2. Check continuity between BCM connector terminal ⑳ and ㉙.

Key position	Continuity
Neutral/unlock	No
Between neutral and unlock	Yes

OK → Perform LAN communication check again. (Refer to EL-102.) → Replace BCM.

NG ↓

Check trunk lid key cylinder switch. Refer to "Electrical Components Inspection". (EL-209)

NG → Replace trunk lid key cylinder switch.

OK ↓

B

TRUNK LID KEY CYLINDER SWITCH CIRCUIT CHECK

1. Check voltage between trunk lid key cylinder switch connector terminal ① and body ground.

Key position	Voltage [V]
Neutral/unlock	Approx. 5
Between neutral and unlock	Approx. 0

2. Disconnect trunk lid key cylinder switch connector.
3. Check continuity between trunk lid key cylinder switch terminal ③ and body ground.
Continuity should exist.

NG → Repair harness or connectors.

OK ↓

Perform LAN communication check again. (Refer to EL-102.)

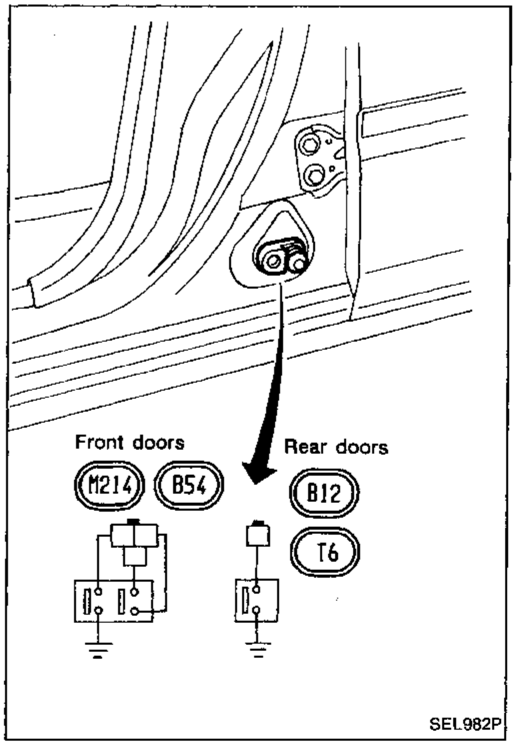
GI
MA
EM
LC
EF & EC
FE
AT
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

Trouble Diagnoses (Cont'd)

ELECTRICAL COMPONENTS INSPECTION

Door switches

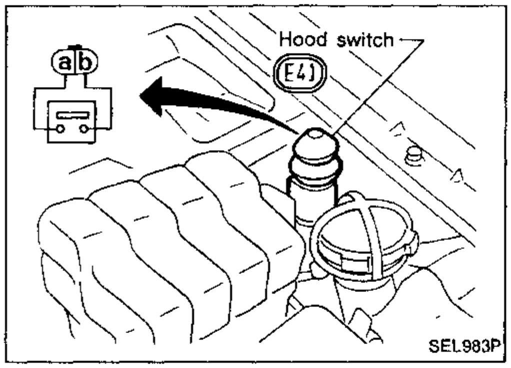
Check continuity between terminal and switch body.



Hood switch

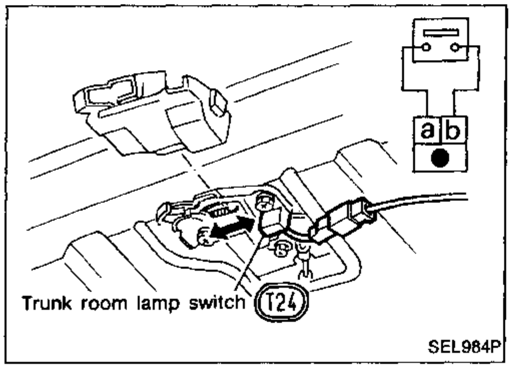
Check continuity between terminals when hood switch is pushed and released.

	Terminal
Pushed	No continuity
Released	ⓐ — ⓑ

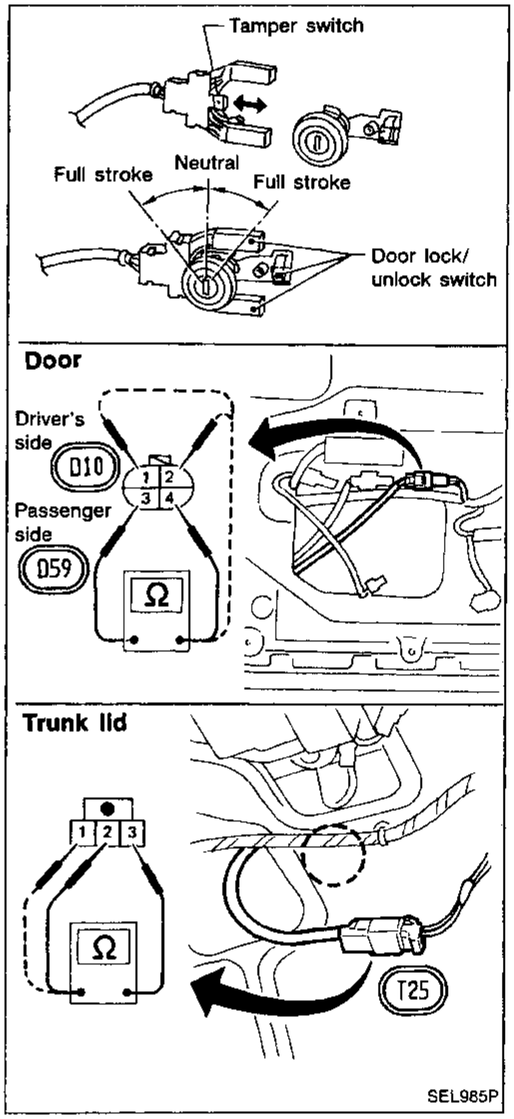


Trunk room lamp switch

Trunk lid	Terminal
Closed	No continuity
Open	ⓐ — ⓑ



Trouble Diagnoses (Cont'd)



SEL985P

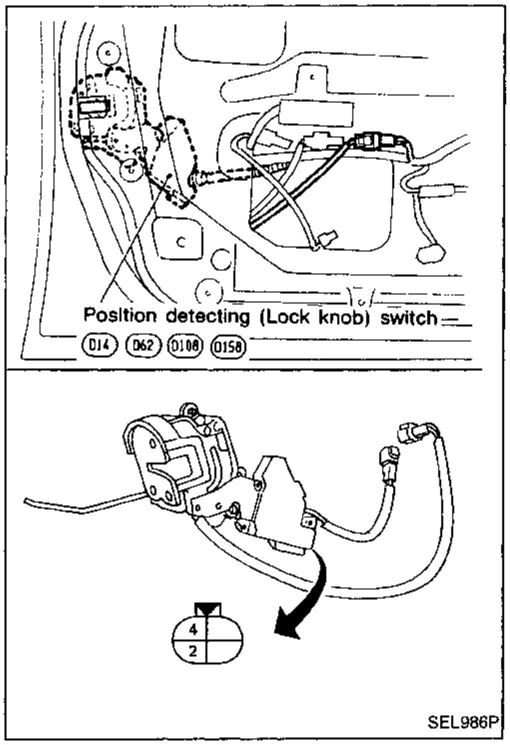
Key cylinder tamper switch, door lock switch and door unlock switch

- **Door**

TAMPER SWITCH	
Key cylinder is installed	No continuity
Key cylinder is removed	③ — ④
DOOR LOCK SWITCH	
Full stroke	No continuity
Between full stroke and neutral	② — ③
Neutral	No continuity
DOOR UNLOCK SWITCH	
Neutral side	No continuity
Unlock side	① — ③

- **Trunk lid**

TAMPER SWITCH	
Key cylinder is installed	No continuity
Key cylinder is removed	② — ③
TRUNK LID UNLOCK SWITCH	
Full stroke	No continuity
Between full stroke and neutral	① — ③
Neutral	No continuity

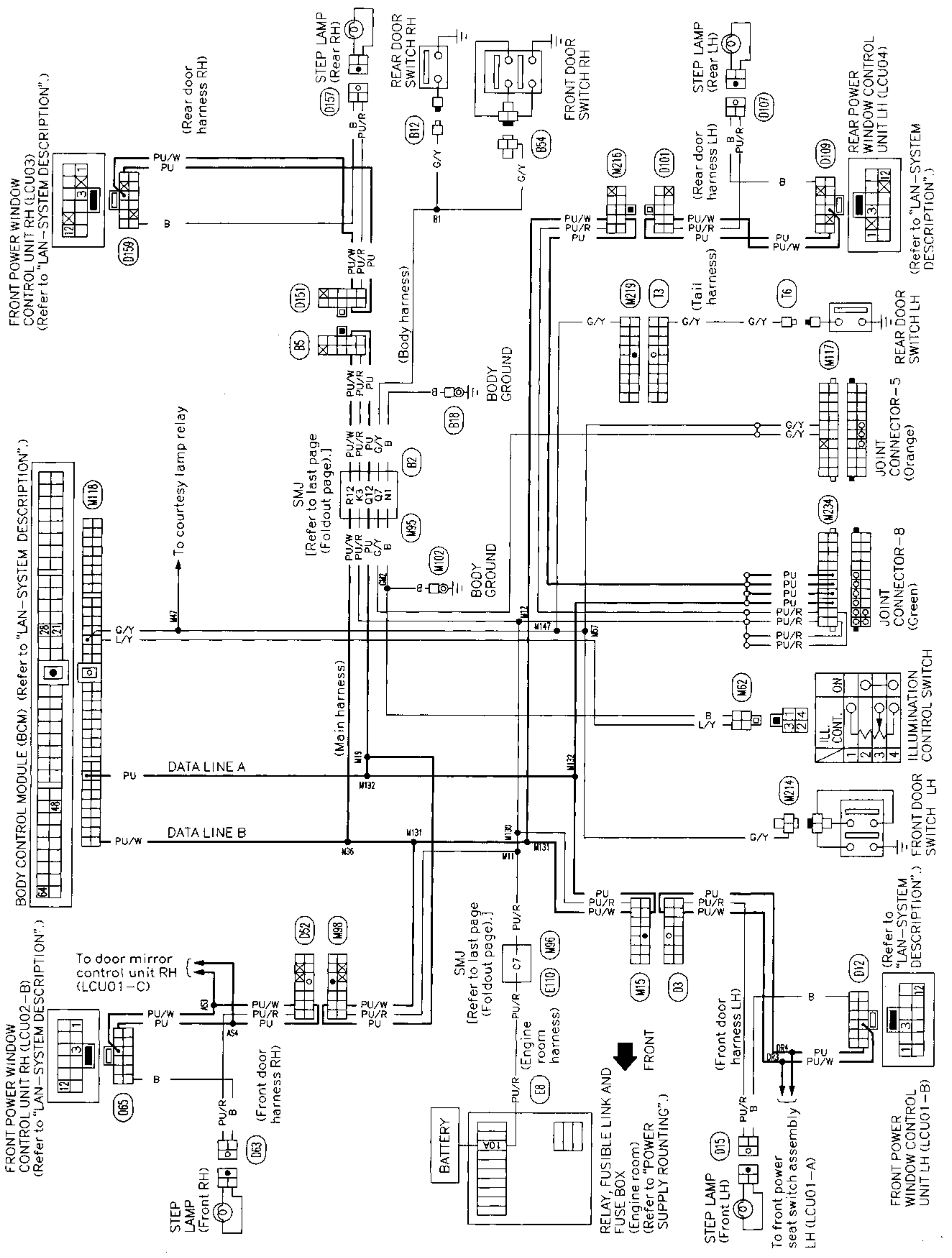


SEL986P

Position detecting (Lock knob) switch

LOCK	No continuity
UNLOCK	④ — ②

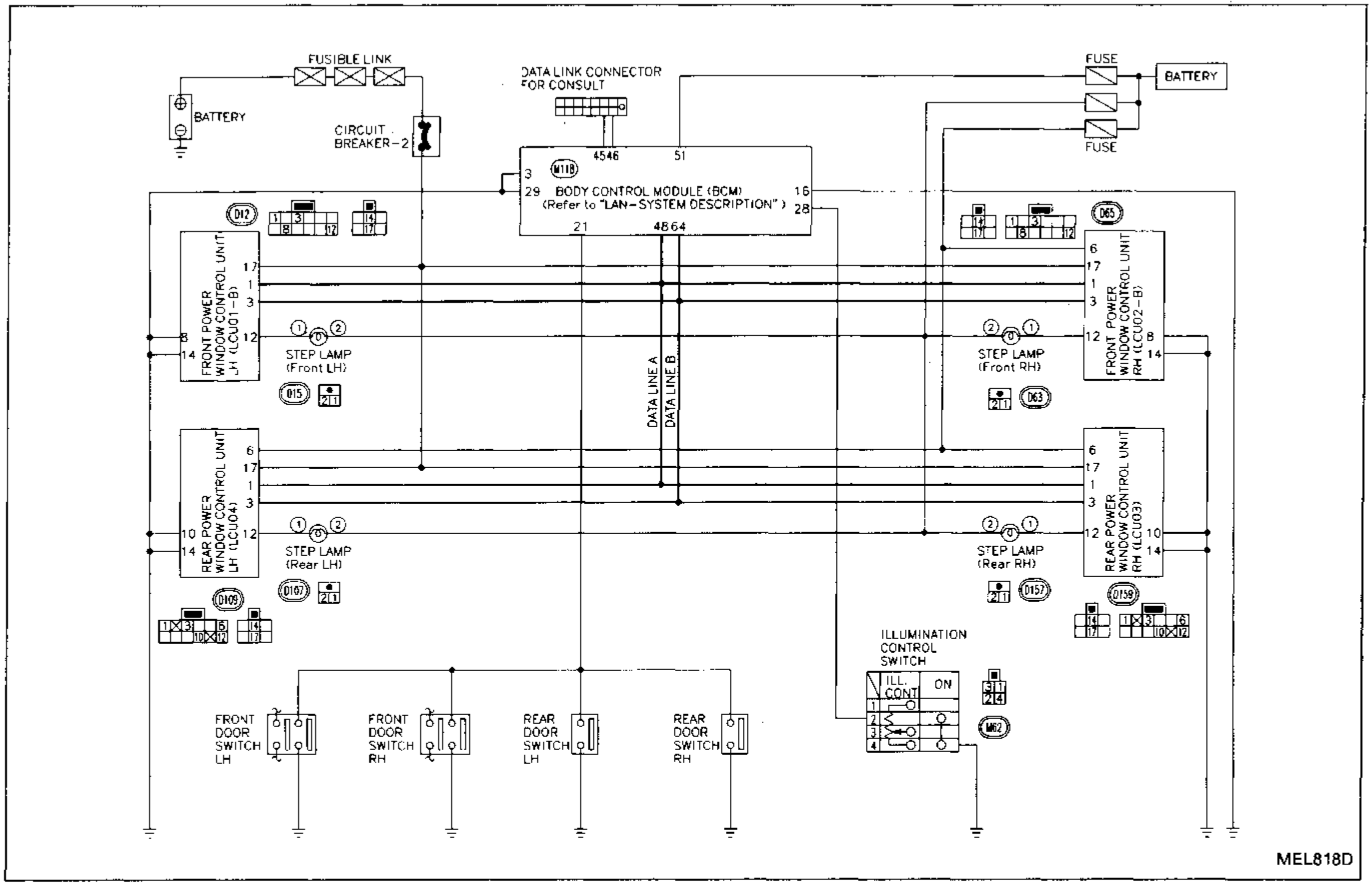
Wiring Diagram



MEL740D

Trouble Diagnoses

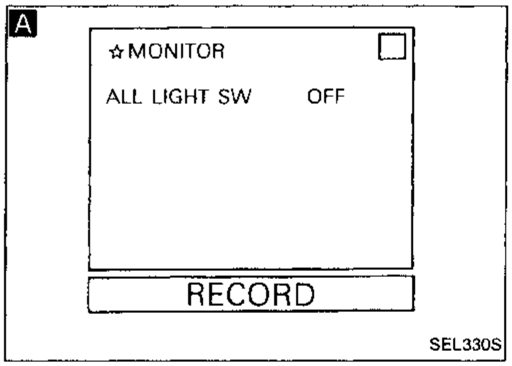
CIRCUIT DIAGRAM FOR QUICK PINPOINT CHECK



Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

SYMPTOM: No step lamp lights up when illumination control switch is turned "ON".

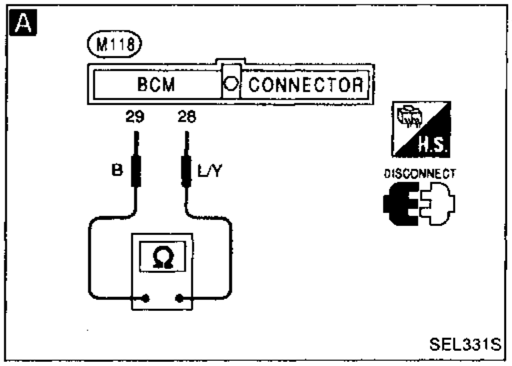


☆MONITOR ☐

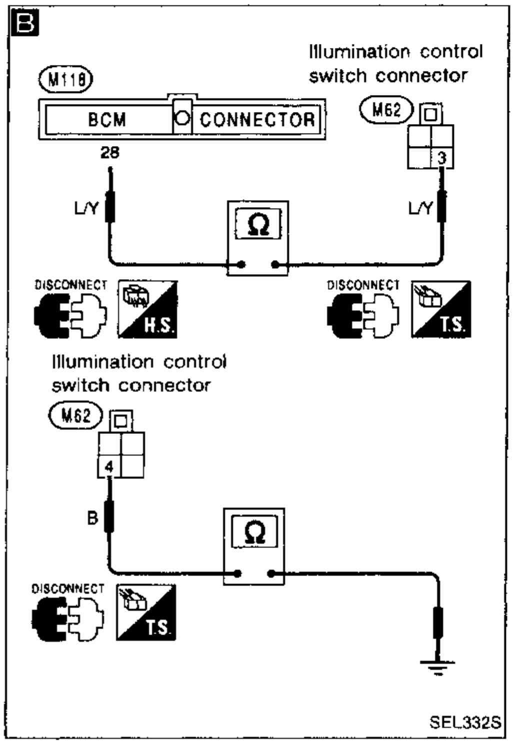
ALL LIGHT SW OFF

RECORD

SEL330S



SEL331S



SEL332S

A

ILLUMINATION CONTROL SWITCH INPUT SIGNAL CHECK

See "ALL LIGHT SW" in "Data Monitor" mode.
When illumination control switch is turned on,
ALL LIGHT SW ON
When illumination control switch is turned off,
ALL LIGHT SW OFF

— OR —

1. Disconnect BCM connector.
2. Check continuity between BCM connector terminals ㉘ and ㉙.

Condition of ill. cont. switch	Continuity
OFF	No
ON	Yes

OK → Perform LAN communication check again. (Refer to EL-102.)

OK → Replace BCM.

NG ↓

Check illumination control switch. Refer to "INTERIOR LAMP". (EL-36)

NG → Replace illumination control switch.

OK ↓

B

ILLUMINATION CONTROL SWITCH CIRCUIT CHECK

1. Check harness continuity between BCM terminal ㉘ and illumination control switch terminal ③.
2. Check continuity between illumination control switch terminal ④ and body ground.

Continuity should exist.

NG → Repair harness or connectors.

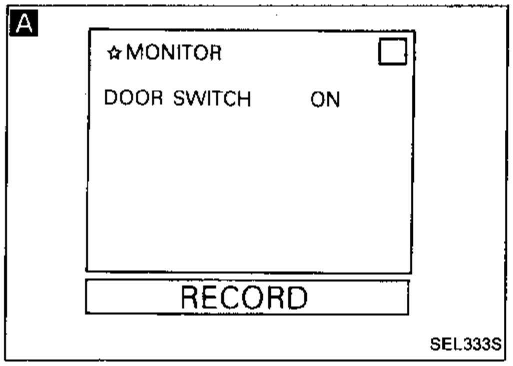
OK ↓

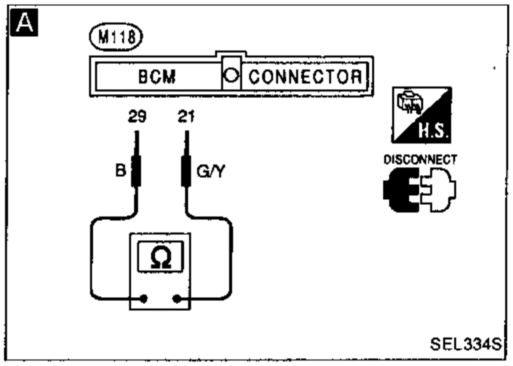
Check connections at each connector.

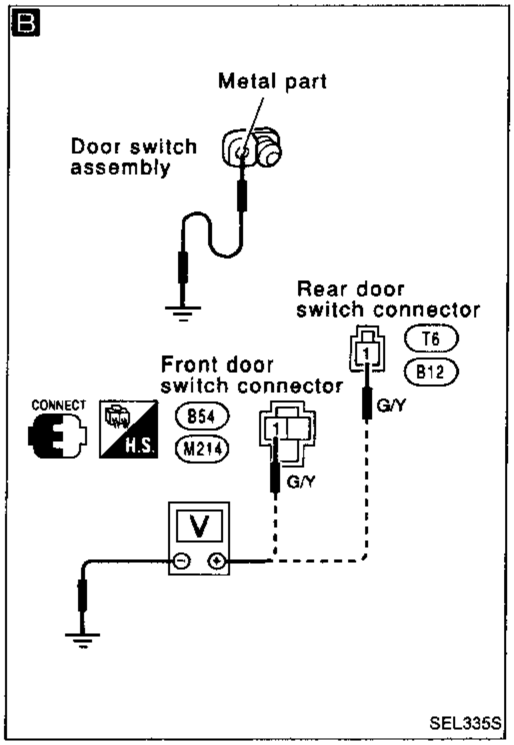
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

SYMPTOM: No step lamp lights up when any one or more doors are opened.







A

DOOR SWITCH INPUT SIGNAL CHECK

See "DOOR SWITCH" in "Data Monitor" mode. Open and then close one door at a time for all doors.

When at least one door is open,
DOOR SWITCH ON

When all doors are closed,
DOOR SWITCH OFF

OR

1. Disconnect BCM connector.
2. Check continuity between BCM connector terminals ㉑ and ㉙.

Condition	Continuity
At least one door open	Yes
All doors closed	No

OK → Perform LAN communication check again. (Refer to EL-102.)

OK → Replace BCM.

NG ↓

Check door switch.

NG → Replace door switch.

OK ↓

B

DOOR SWITCH CIRCUIT CHECK

1. Remove door switch assembly.
2. Connect metal part of door switch assembly with body ground.
3. Check voltage between door switch connector terminal ① and body ground.

Condition	Voltage [V]
Door switch pushed	Approx. 12
Door switch released	Approx. 0

NG → Repair harness or connectors.

OK ↓

Check connections at each connector.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

SYMPTOM: Some step lamps do not light up while other step lamps do.

Check step lamps that do not light up.

- NG → Replace step lamp.
- OK ↓

A

STEP LAMP CIRCUIT CHECK

1. Disconnect step lamp connector.
2. Check voltage between step lamp connector terminal ② and terminal ⑭ of LCU01B (driver side), LCU02B (passenger side), LCU03 (rear RH), or LCU04 (rear LH) connector accordingly.

Voltage should be approx. 12 [V]

- NG → Check fuse or harness between battery and step lamp.
- OK ↓

B

STEP LAMP GROUND CIRCUIT CHECK

1. Disconnect LCU01B, LCU02B, LCU03 or LCU04 connector accordingly.
2. Check harness continuity between step lamp connector terminal ① and LCU terminal ⑫.

Continuity should exist.

- NG → Repair harness.
- OK ↓

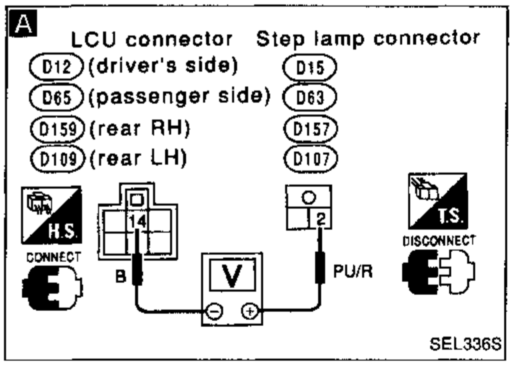
C

LCU OUTPUT SIGNAL CHECK

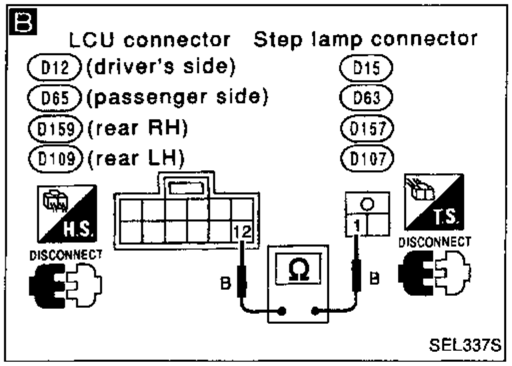
1. Connect each LCU connector and each step lamp connector.
2. Check voltage between LCU terminals ⑫ and ⑭ with all doors closed.

Condition of illumination control switch	Voltage [V]
ON	0
Except ON	Approx. 12

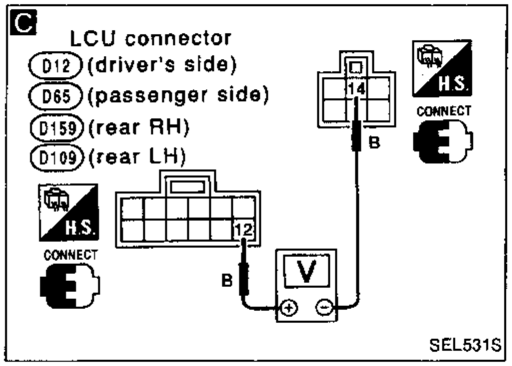
- OK → Perform LAN communication check again. (Refer to EL-102.)
  - OK ↓ Replace BCM.
- NG ↓ Replace LCU01B, 02B, 03 or 04.



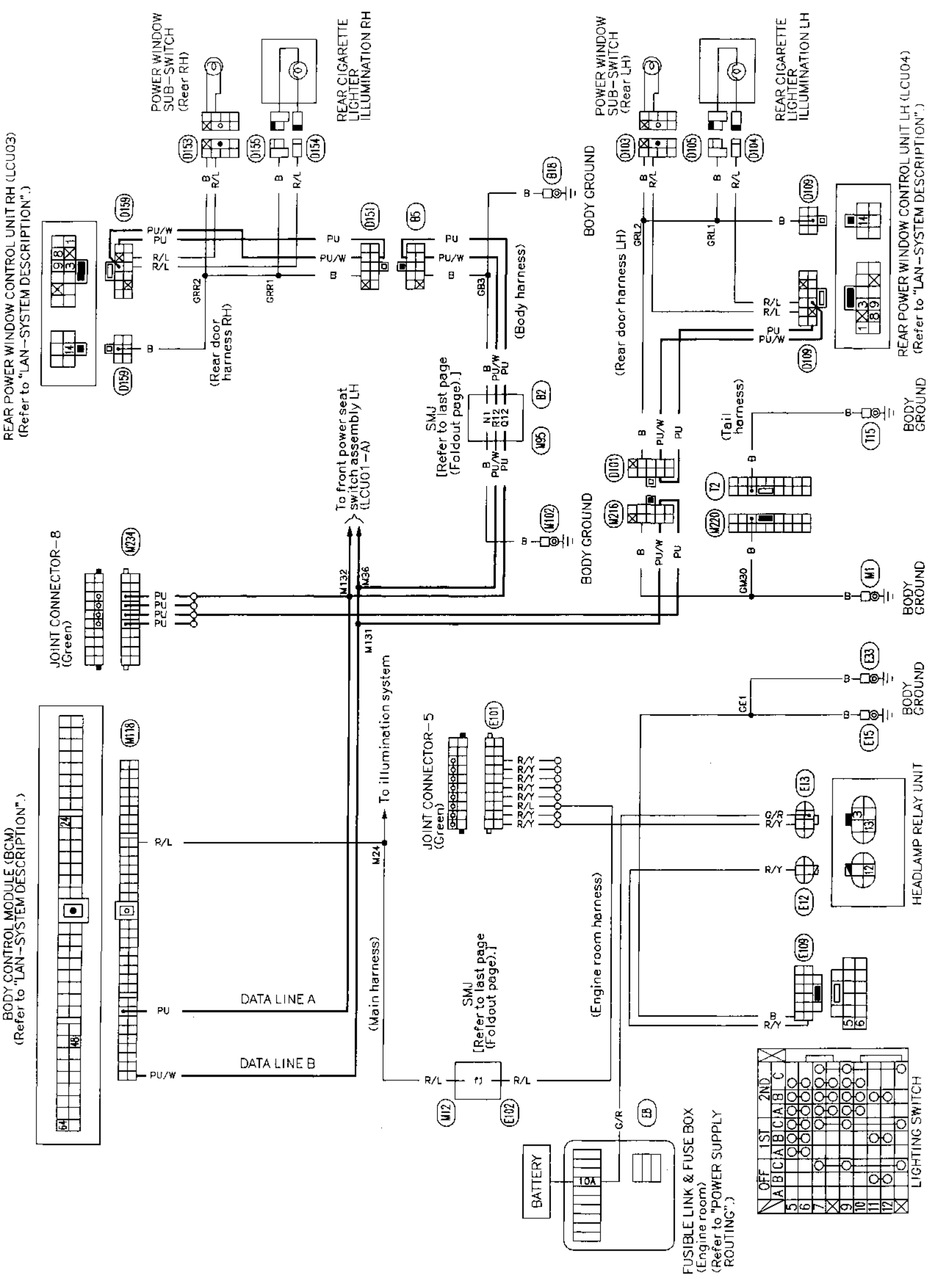
SEL336S



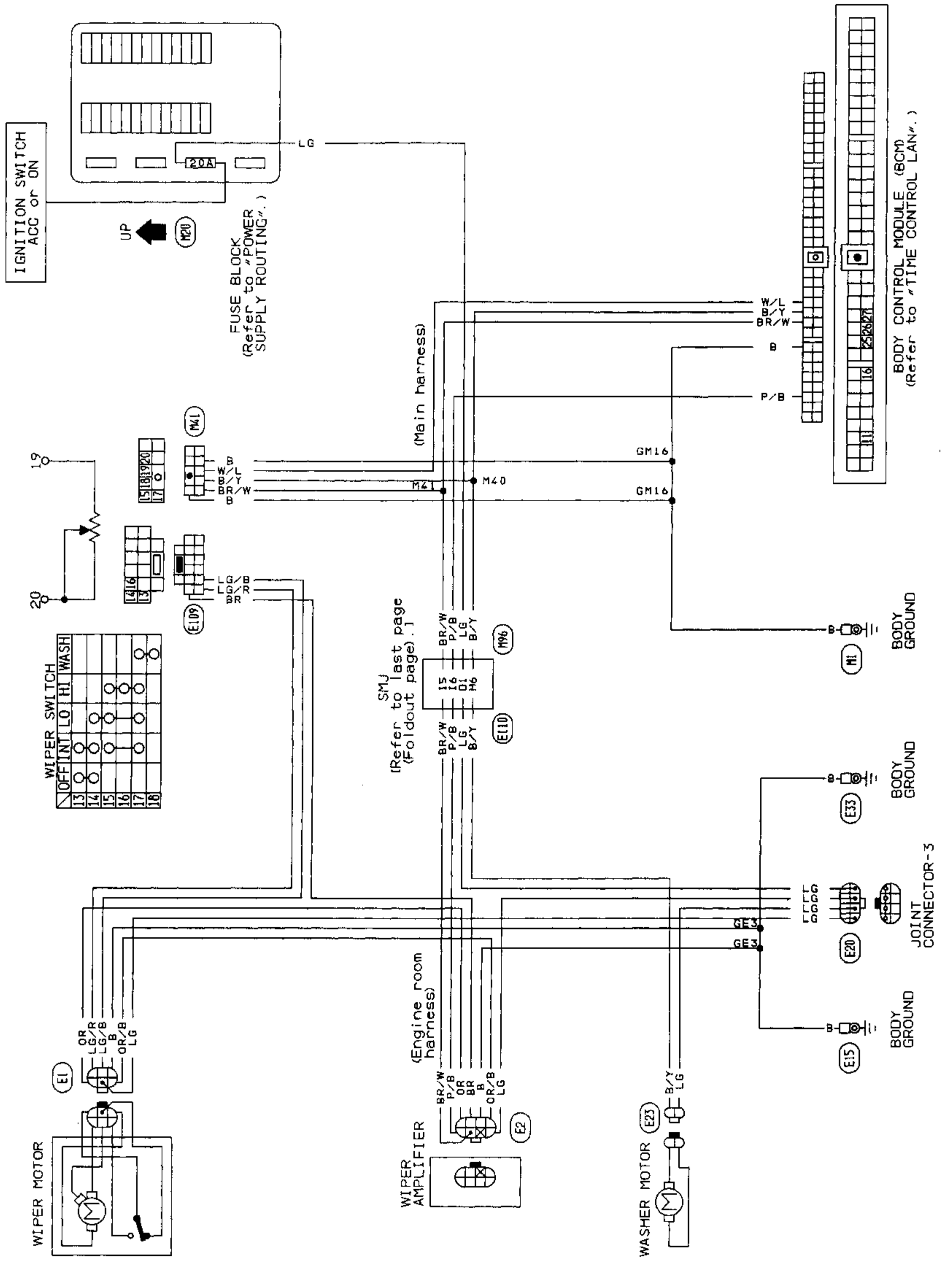
SEL337S



SEL531S

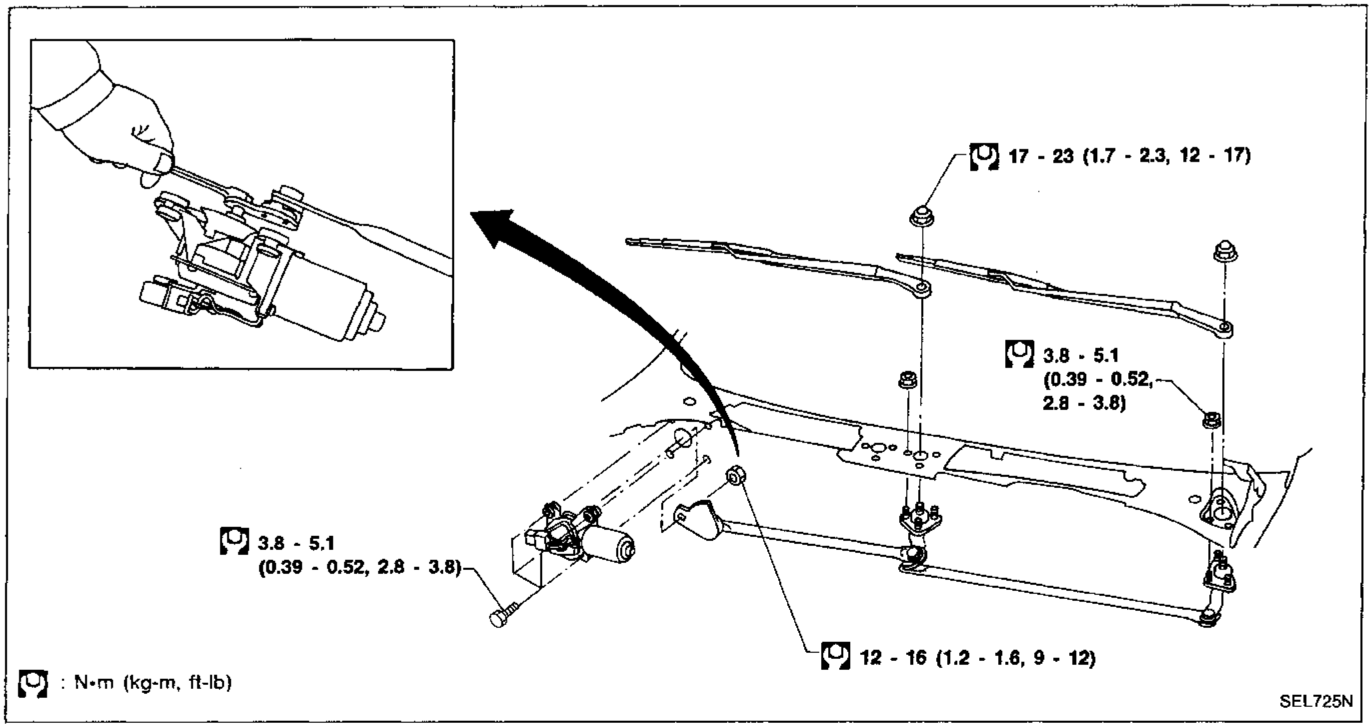

POWER WINDOW SUB-SWITCH (Rear RH)
REAR CIGARETTE LIGHTER ILLUMINATION RH
POWER WINDOW SUB-SWITCH (Rear LH)
REAR CIGARETTE LIGHTER ILLUMINATION LH
REAR POWER WINDOW CONTROL UNIT RH (LCU03) (Refer to "LAN-SYSTEM DESCRIPTION".)
REAR POWER WINDOW CONTROL UNIT LH (LCU04) (Refer to "LAN-SYSTEM DESCRIPTION".)
D153
D155
D154
D159
D151
B5
B18
D103
D105
D104
D109
D101
M216
T2
M220
T115
BODY GROUND
(Rear door harness RH)
(Body harness)
(Rear door harness LH)
(Tail harness)
GRR2
GRR1
GB3
GRL2
GRL1
GM30
GE1
PU/W
PU
R/L
B
SMJ [Refer to last page (Foldout page).]
N1
R12
Q12
B2
M95
M102
To front power seat switch assembly LH (LCU01-A)
M132
M36
M131
JOINT CONNECTOR-8 (Green)
M234
M1
BODY CONTROL MODULE (BCM) (Refer to "LAN-SYSTEM DESCRIPTION".)
M118
24
48
64
DATA LINE A
DATA LINE B
To illumination system
M24
(Main harness)
JOINT CONNECTOR-5 (Green)
E101
R/Y
(Engine room harness)
E33
E15
E13
E12
G/R
HEADLAMP RELAY UNIT
12
13
E109
5
6
LIGHTING SWITCH
OFF
1ST
2ND
A
B
C
7
9
10
11
12
M12
E102
f1
E8
BATTERY
10A
FUSIBLE LINK & FUSE BOX (Engine room) (Refer to "POWER SUPPLY ROUTING".)
MEL462C

Front Wiper and Washer/Wiring Diagram



Wiper Removal and Installation

Before removing front wiper motor link, turn wiper switch OFF and disconnect motor leads at connectors.



Wiper Arm Installation

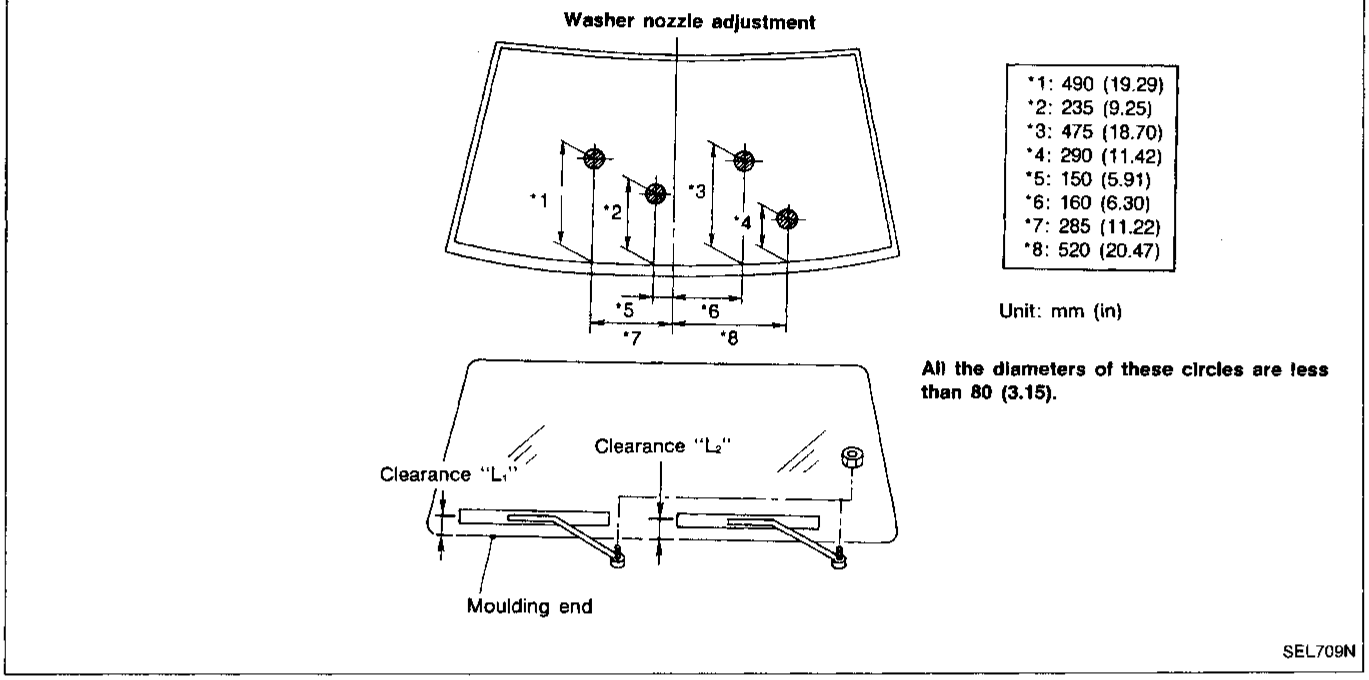
1. Prior to wiper arm installation, turn on wiper switch to operate wiper motor and then turn it "OFF" (Auto Stop).
2. Lift the blade up and then set it down onto glass surface to set the blade center to clearance "L_1" or "L_2" immediately before tightening nut.
3. Eject washer fluid. Turn on wiper switch to operate wiper motor and then turn it "OFF".
4. Ensure that wiper blades stop within clearance "L_1" & "L_2".
   Clearance "L_1": 0 - 10 mm (0 - 0.39 in)
   Clearance "L_2": 0 - 10 mm (0 - 0.39 in)

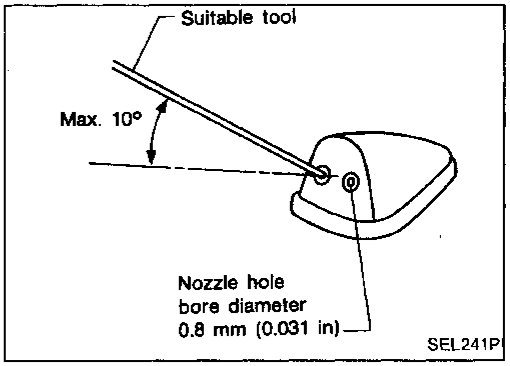
- Tighten windshield wiper arm nuts to specified torque.
  Windshield wiper:
  🔧: 17 - 23 N·m (1.7 - 2.3 kg-m, 12 - 17 ft-lb)

- **Before reinstalling wiper arm, clean up the pivot area. This will reduce possibility of wiper arm looseness.**

Wiper Arm Installation (Cont'd)

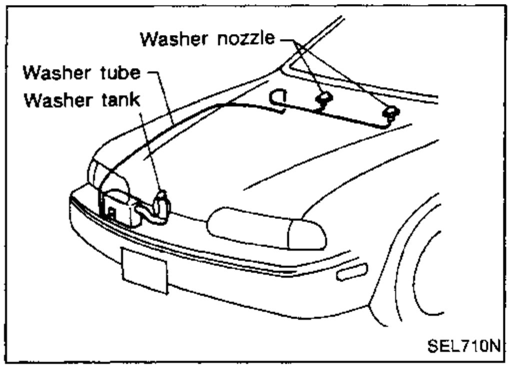
Windshield wiper and washer

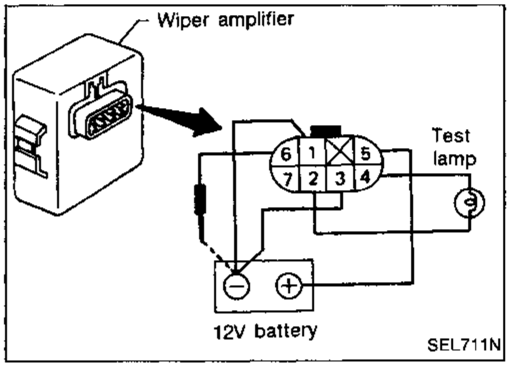




Washer Nozzle Adjustment

- Adjust washer nozzle with suitable tool as shown in the figure at left.
  Adjustable range: ±10°

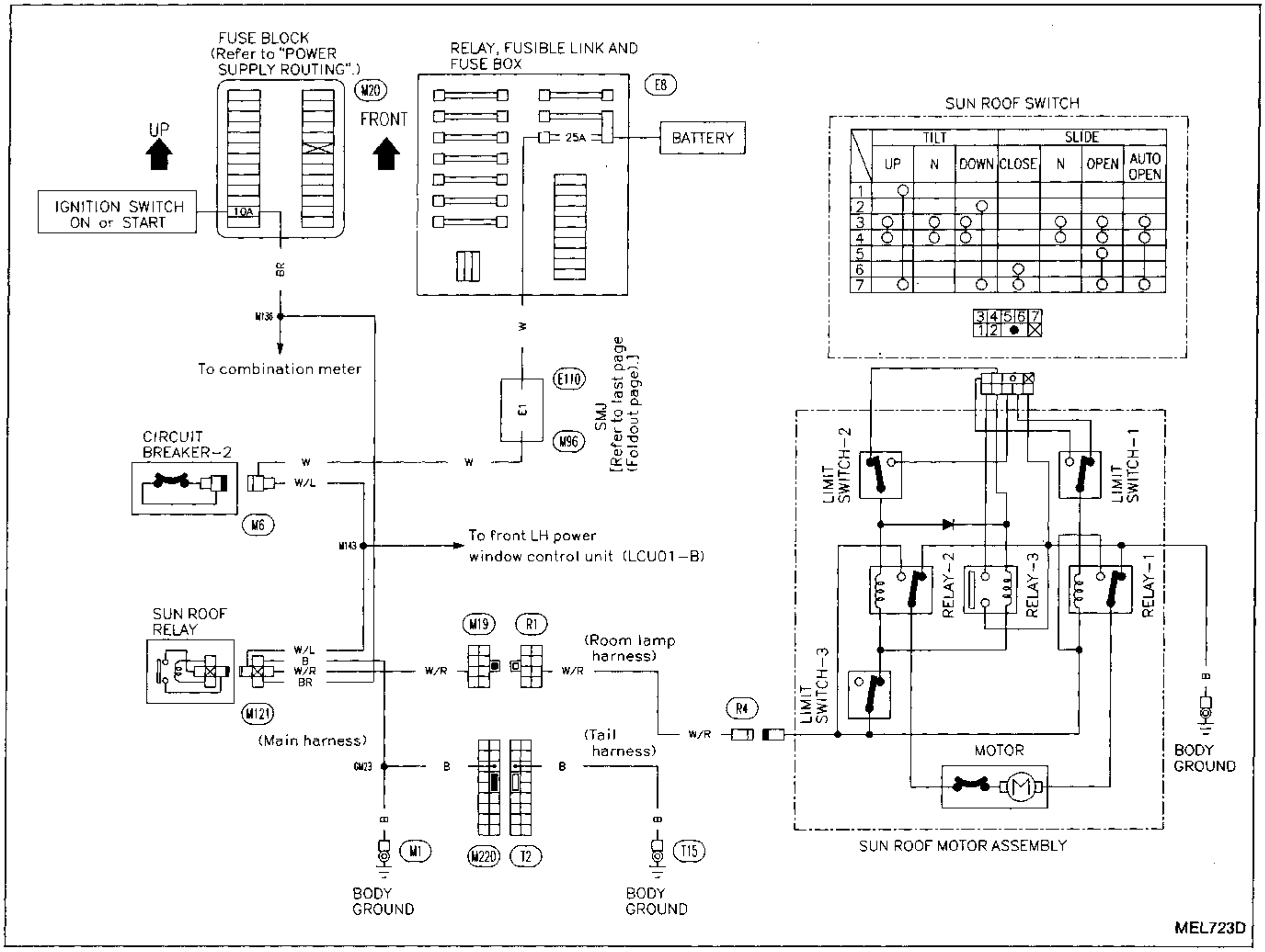




Wiper Amplifier Check

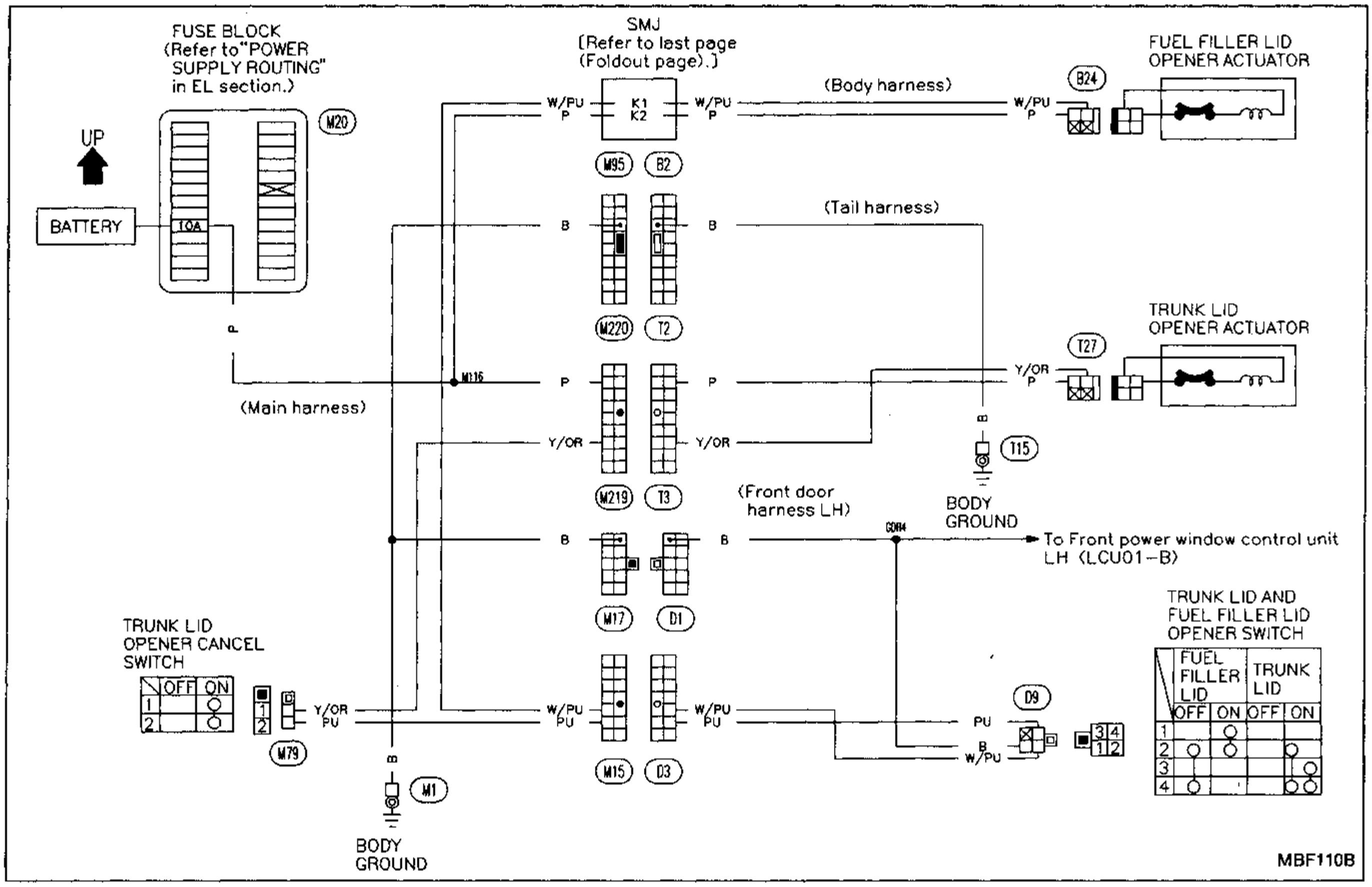
1. Connect as shown in the figure to the left.
2. If test lamp comes on when connect to terminal ⑥ and battery ground, wiper amplifier is normal.

Wiring Diagram

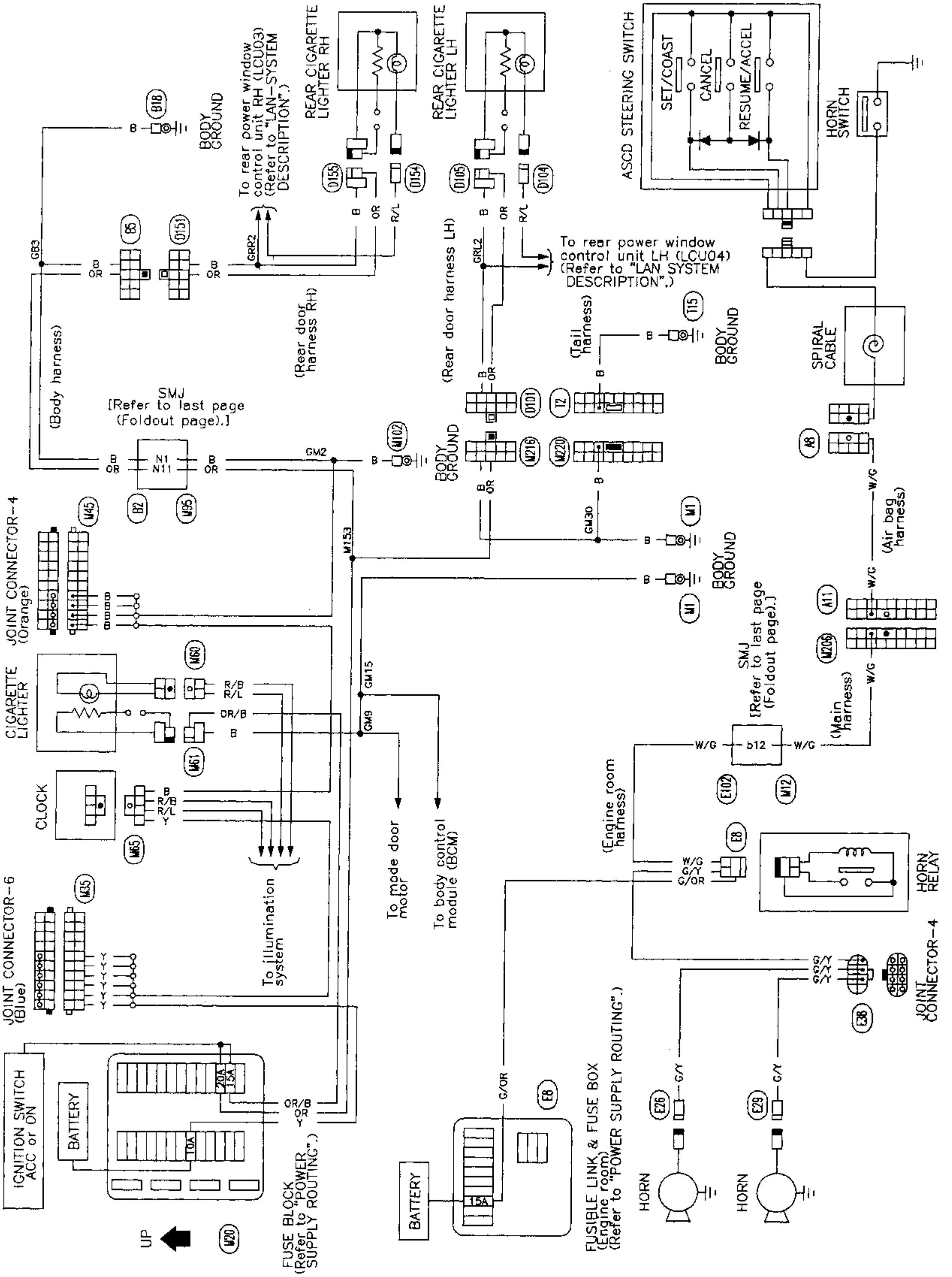


GI
MA
EM
LC
EF & EC
FE
AT
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

Wiring Diagram

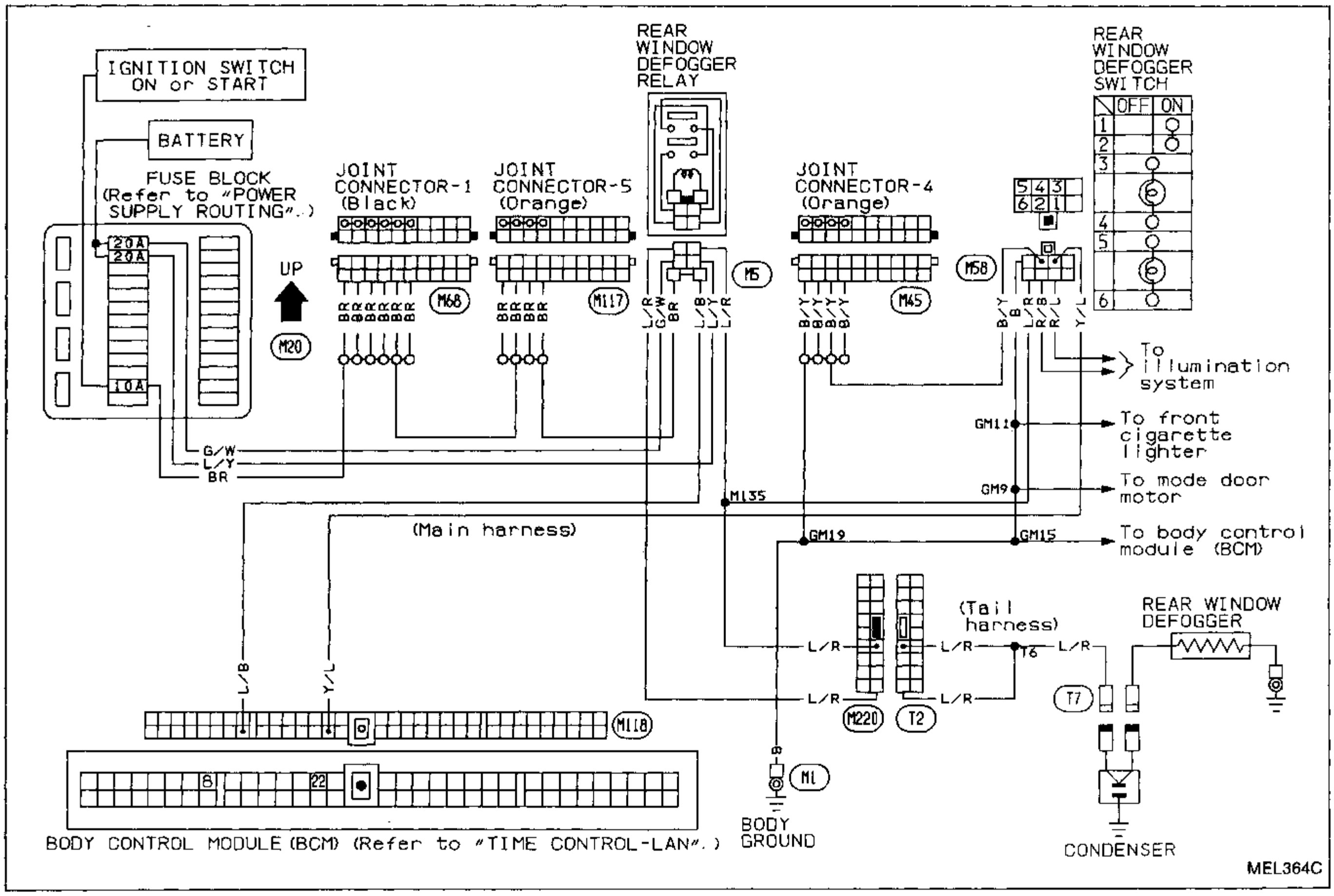


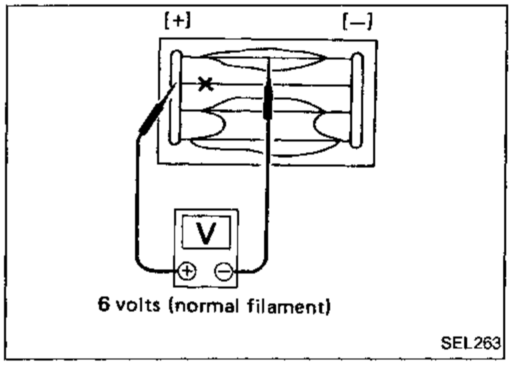
Wiring Diagram



MEL948D

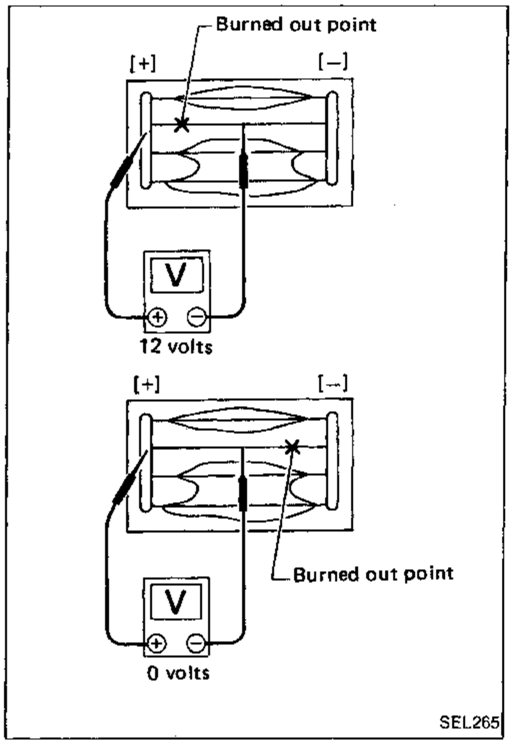
Wiring Diagram



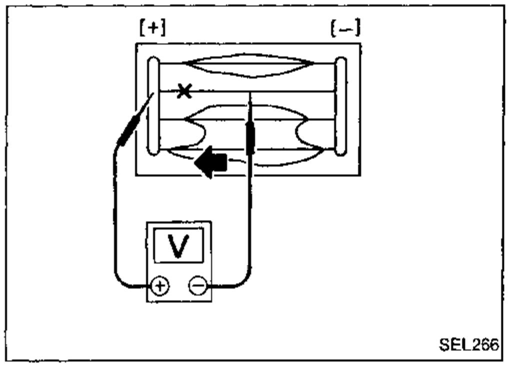


Filament Check

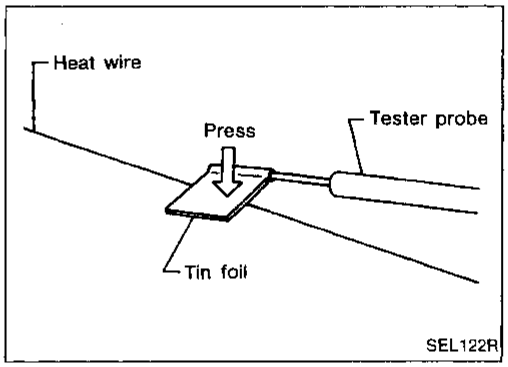
1. Attach probe circuit tester (in volt range) to middle portion of each filament.



2. If a filament is burned out, circuit tester registers 0 or 12 volts.



3. To locate burned out point, move probe to left and right along filament. Tester needle will swing abruptly when probe passes the point.

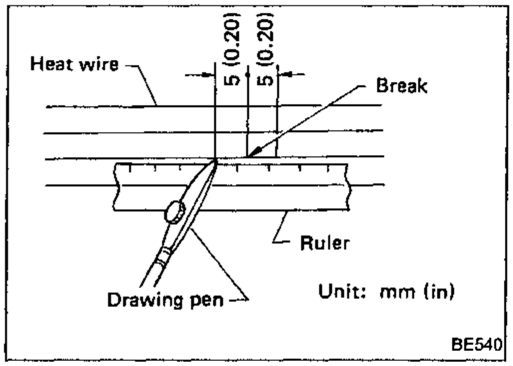


- **When measuring voltage, wrap tin foil around the top of the negative probe. Then, press the foil against the wire with your finger as shown.**

Filament Repair

REPAIR EQUIPMENT

1. Conductive silver composition (Dupont No. 4817 or equivalent)
2. Ruler 30 cm (11.8 in) long
3. Drawing pen
4. Heat gun
5. Alcohol
6. Cloth

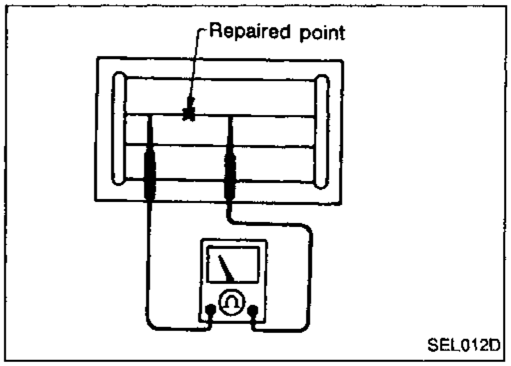


REPAIRING PROCEDURE

1. Wipe broken heat wire and its surrounding area clean with a cloth dampened in alcohol.
2. Apply a small amount of conductive silver composition to tip of drawing pen.

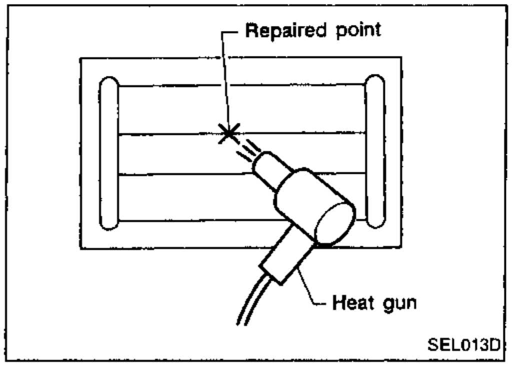
Shake silver composition container before use.

3. Place ruler on glass along broken line. Deposit conductive silver composition on break with drawing pen. Slightly overlap existing heat wire on both sides [preferably 5 mm (0.20 in)] of the break.



4. After repair has been completed, check repaired wire for continuity. This check should be conducted 10 minutes after silver composition is deposited.

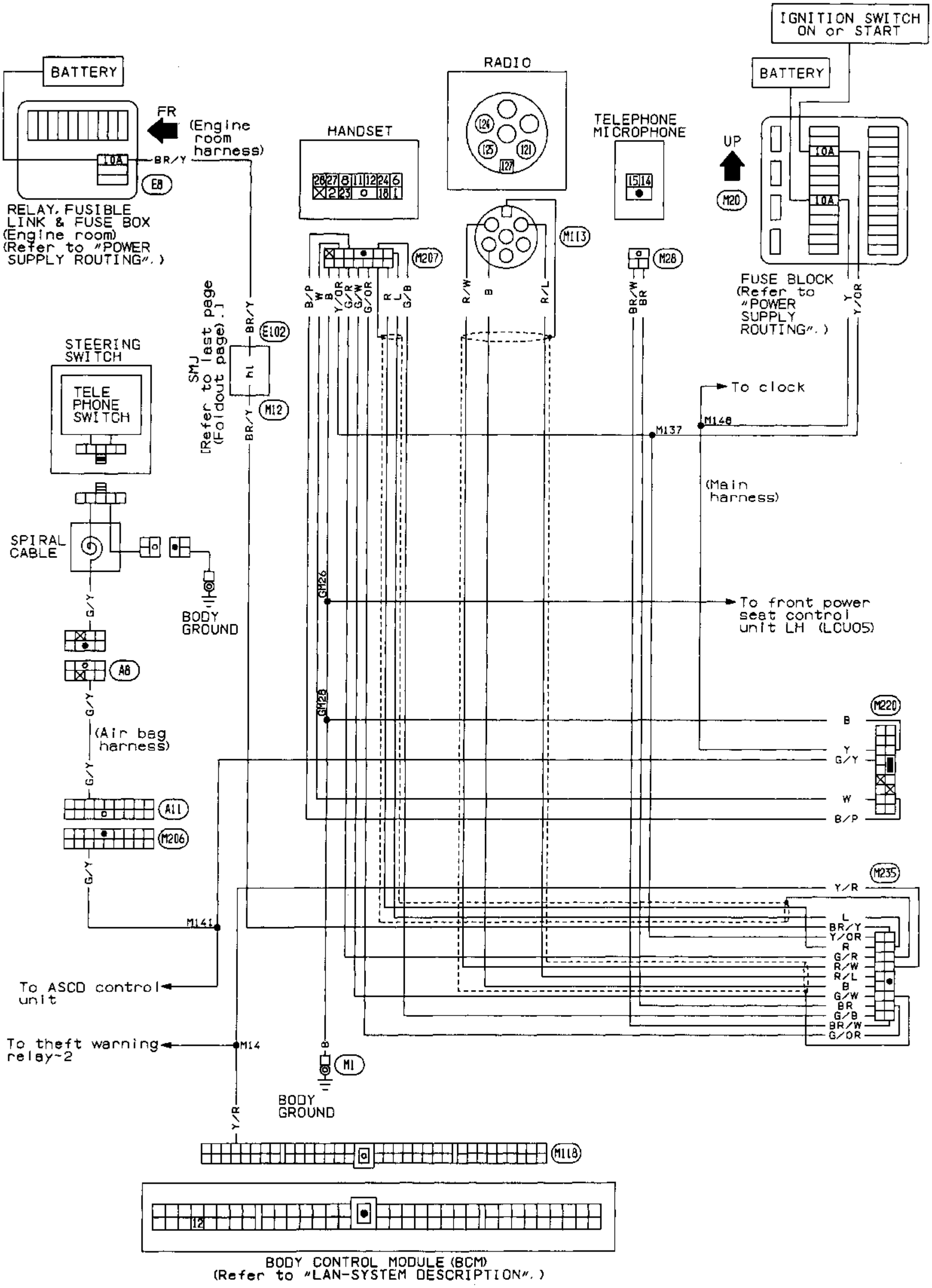
Do not touch repaired area while test is being conducted.



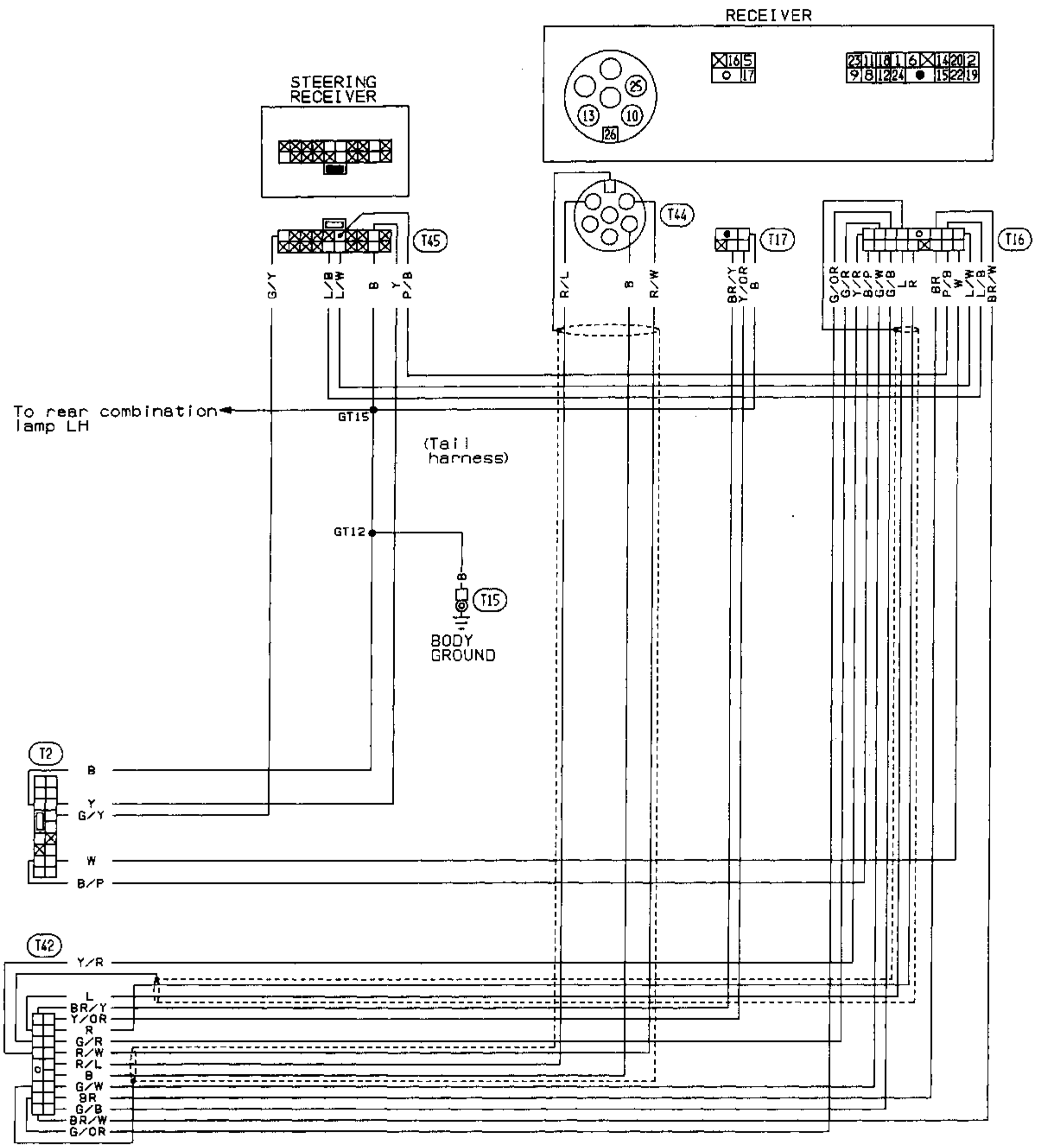
5. Apply a constant stream of hot air directly to the repaired area for approximately 20 minutes with a heat gun. A minimum distance of 3 cm (1.2 in) should be kept between repaired area and hot air outlet. If a heat gun is not available, let the repaired area dry for 24 hours.

NOTE

Telephone/Wiring Diagram

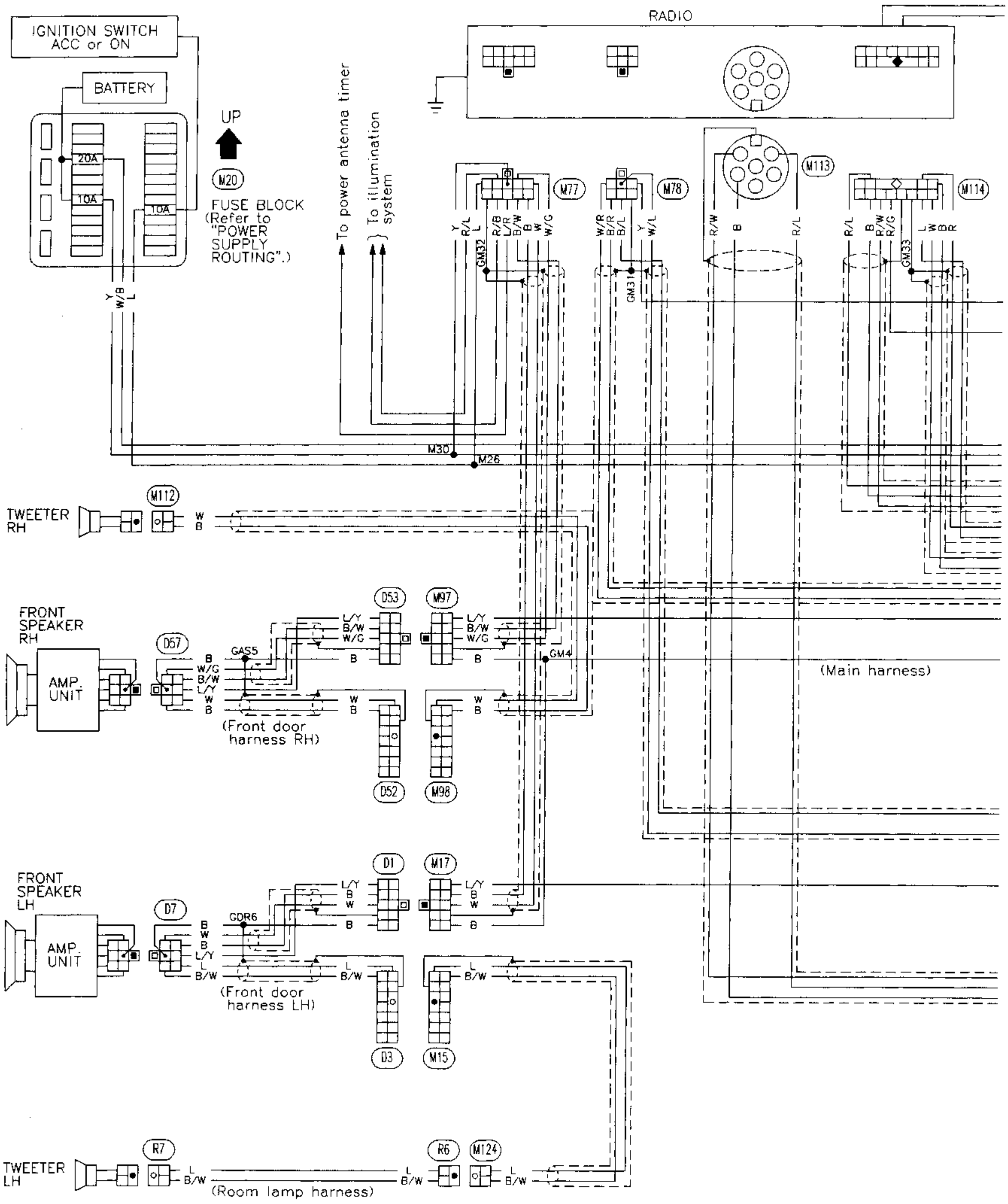


Telephone/Wiring Diagram (Cont'd)

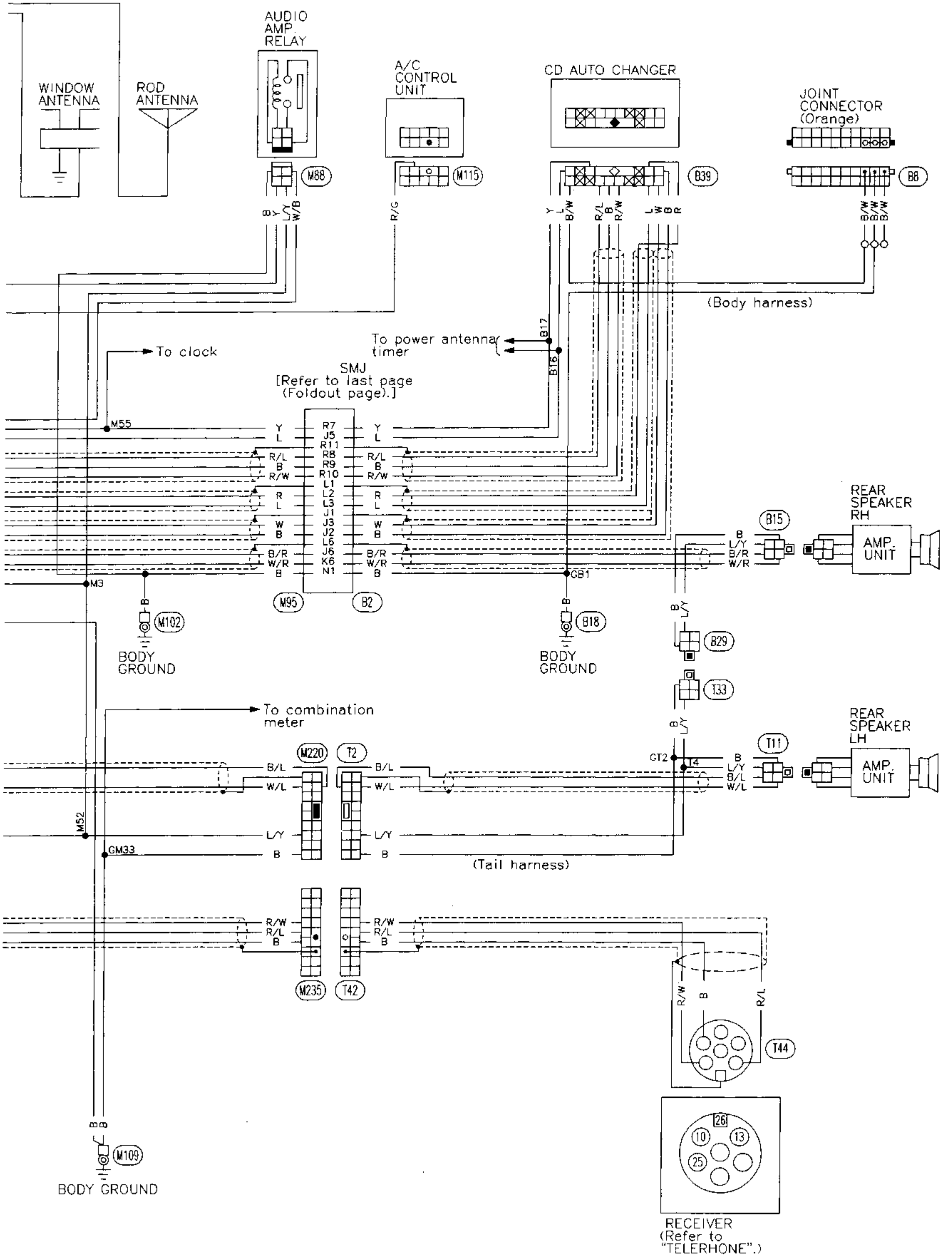


MEL367C

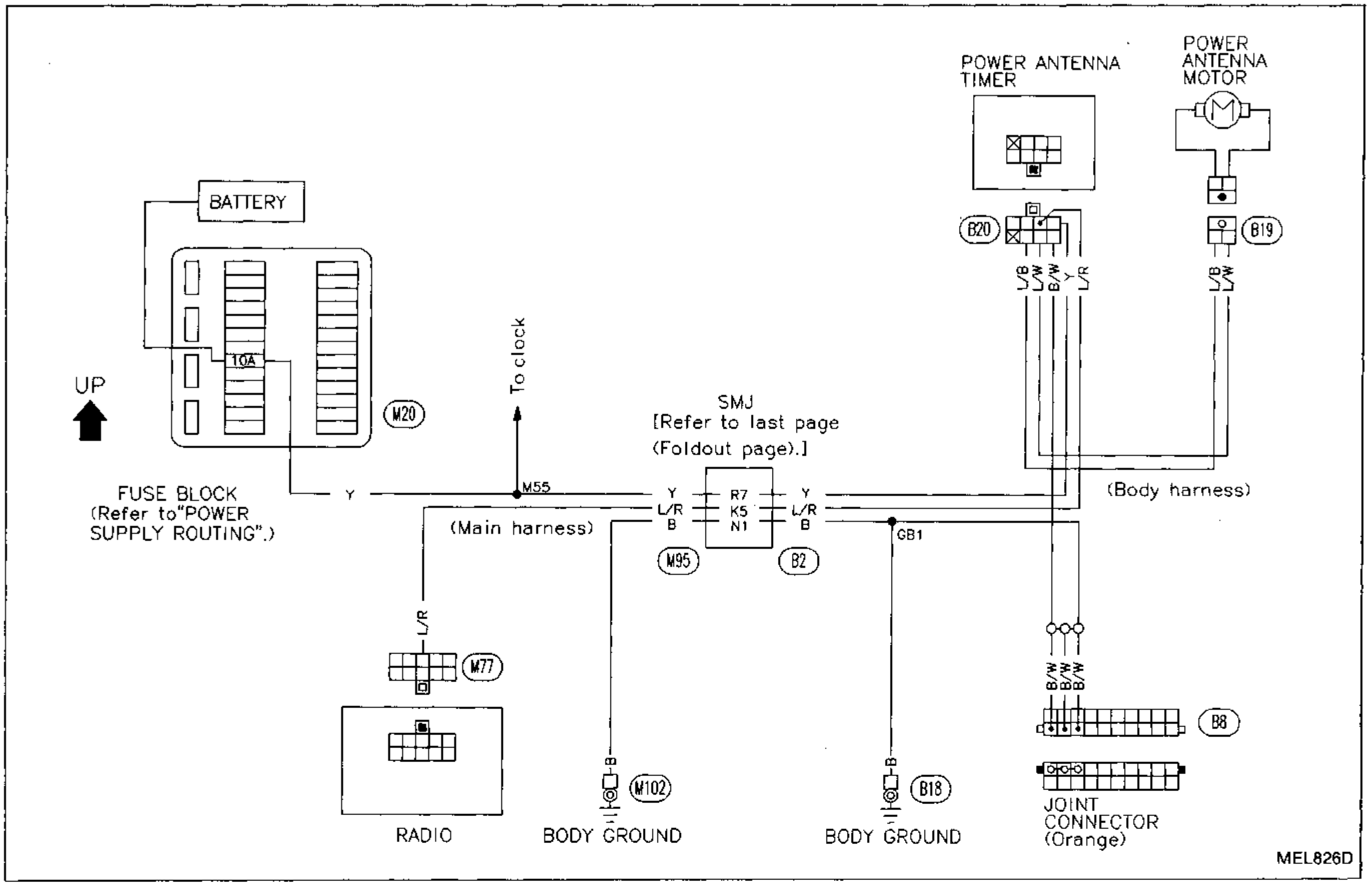
Audio/Wiring Diagram



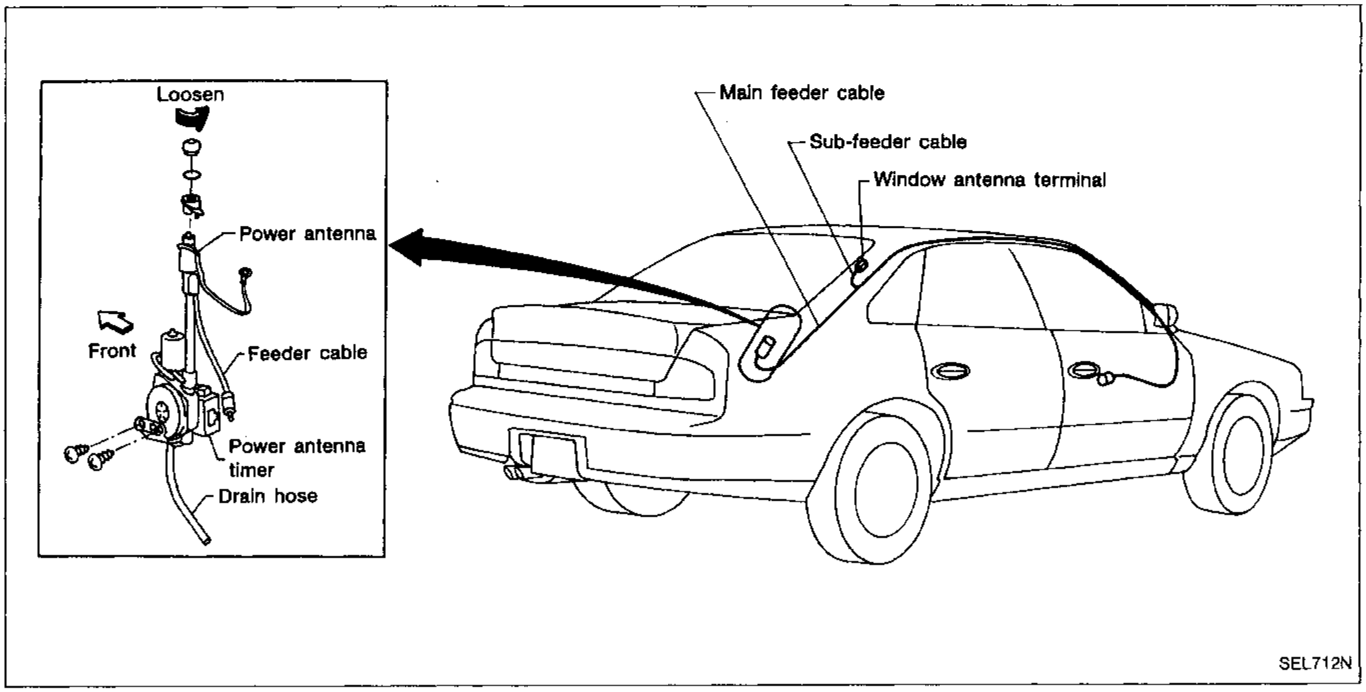
Audio/Wiring Diagram (Cont'd)

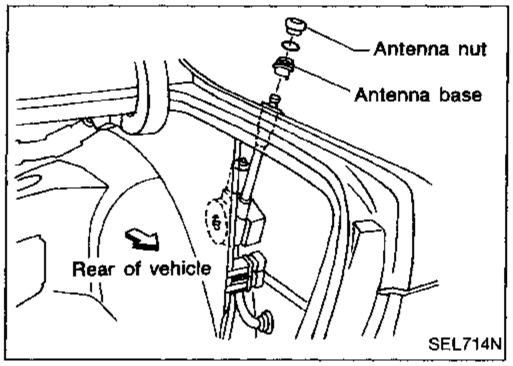


Power Antenna/Wiring Diagram



Location of Antenna

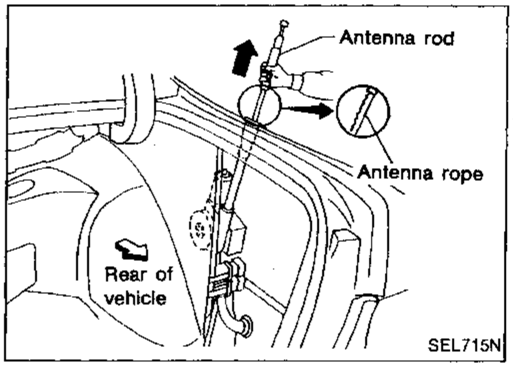




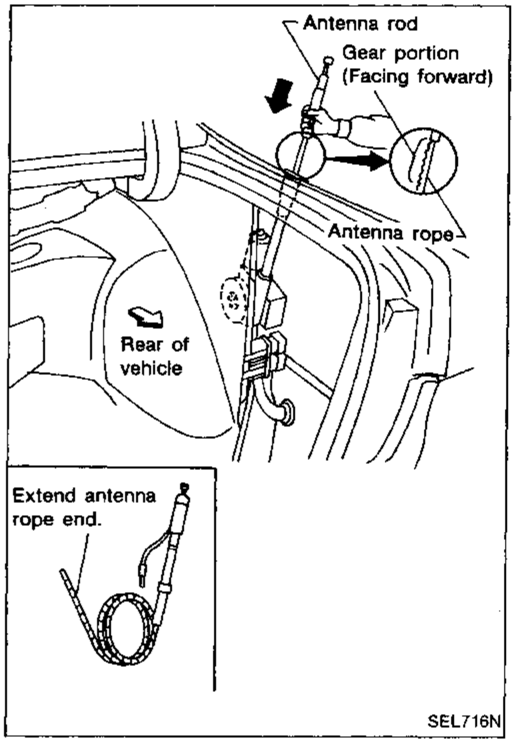
Antenna Rod Replacement

REMOVAL

1. Remove antenna nut and antenna base.



2. Withdraw antenna rod while raising it by operating antenna motor.

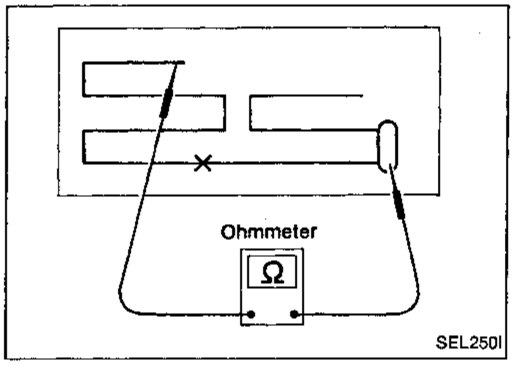


INSTALLATION

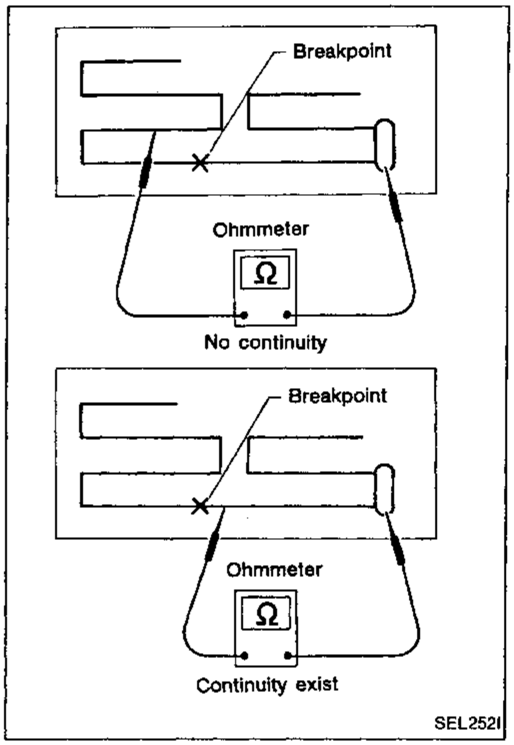
1. Lower antenna rod by operating antenna motor.
2. Insert gear section of antenna rope into place with it facing toward antenna motor.
3. As soon as antenna rope is wound on antenna motor, stop antenna motor. Insert antenna rod lower end into antenna motor pipe.
4. Retract antenna rod completely by operating antenna motor.
5. Install antenna nut and base.

Window Antenna Repair

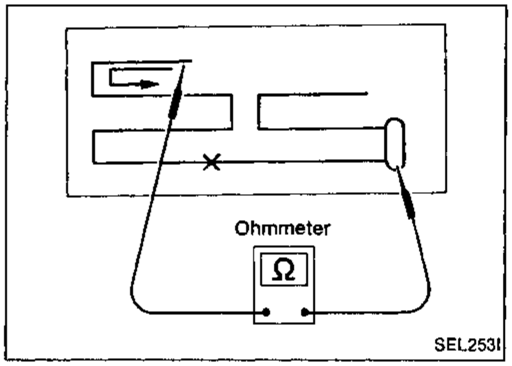
ELEMENT CHECK



1. Attach probe circuit tester (in ohm range) to antenna terminal on each side.



2. If an element is broken, no continuity will exist.

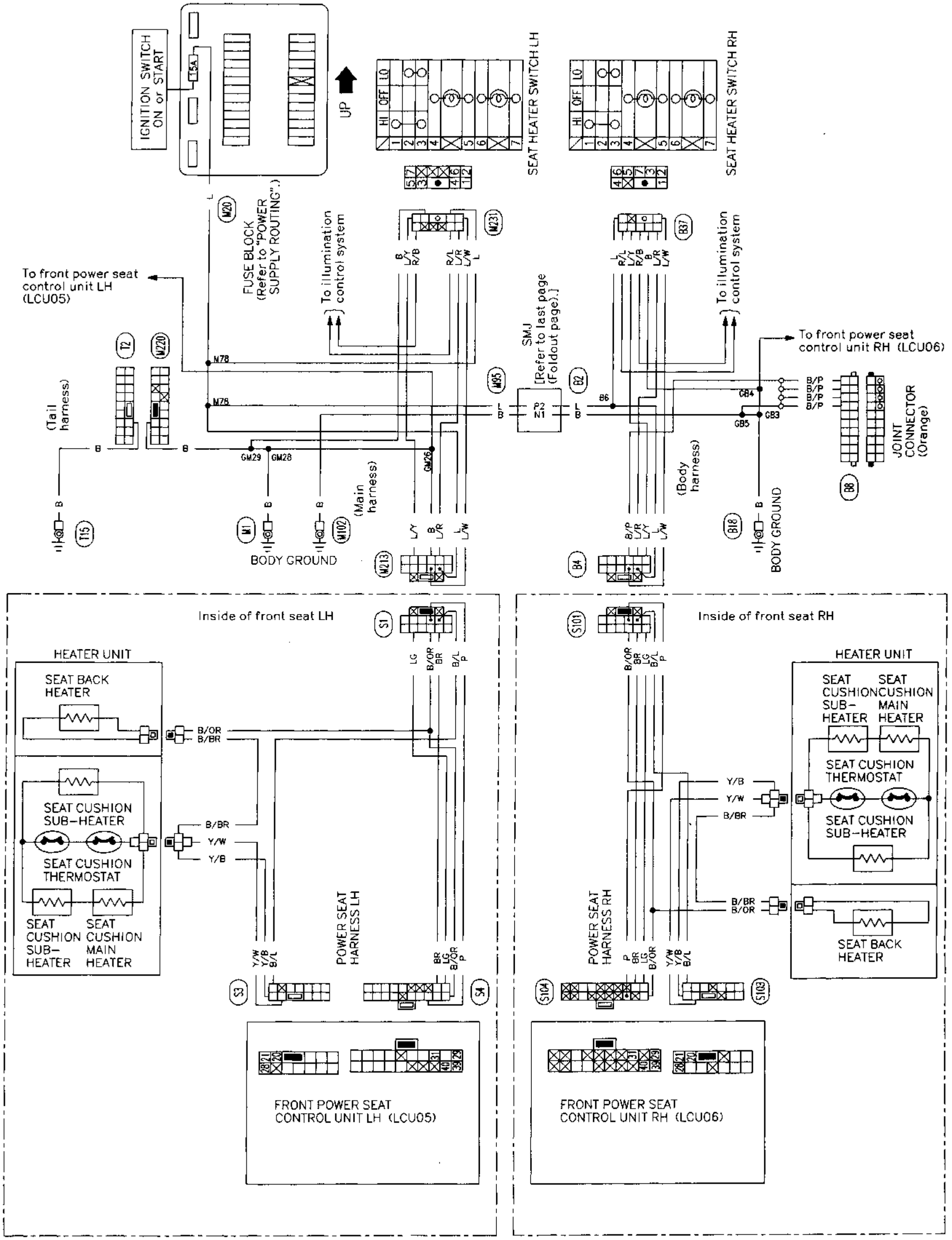


3. To locate broken point, move probe along element. Tester needle will swing abruptly when probe passes the point.

ELEMENT REPAIR

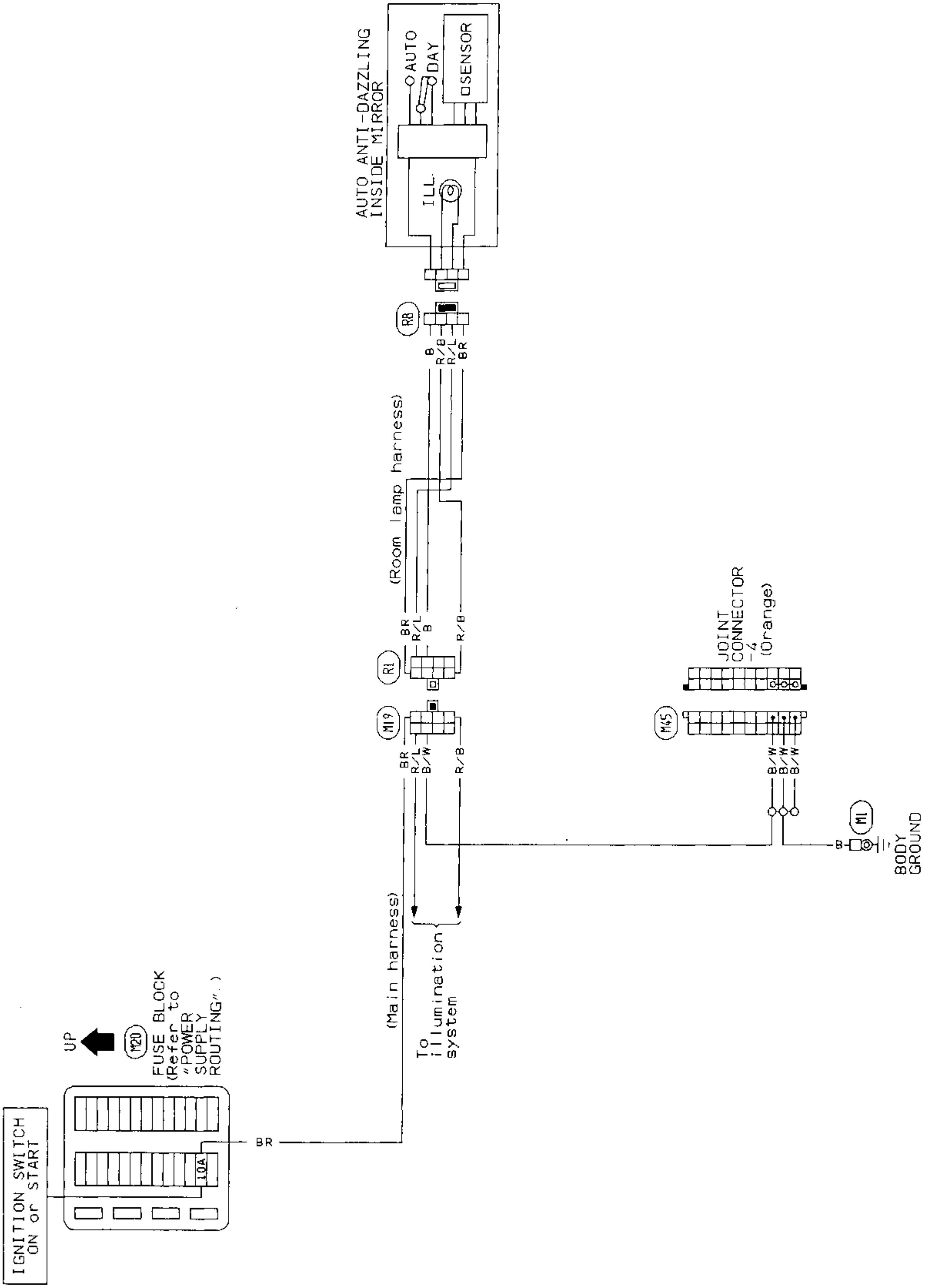
Refer to REAR WINDOW DEFOGGER "Filament Repair" (EL-224).

Wiring Diagram



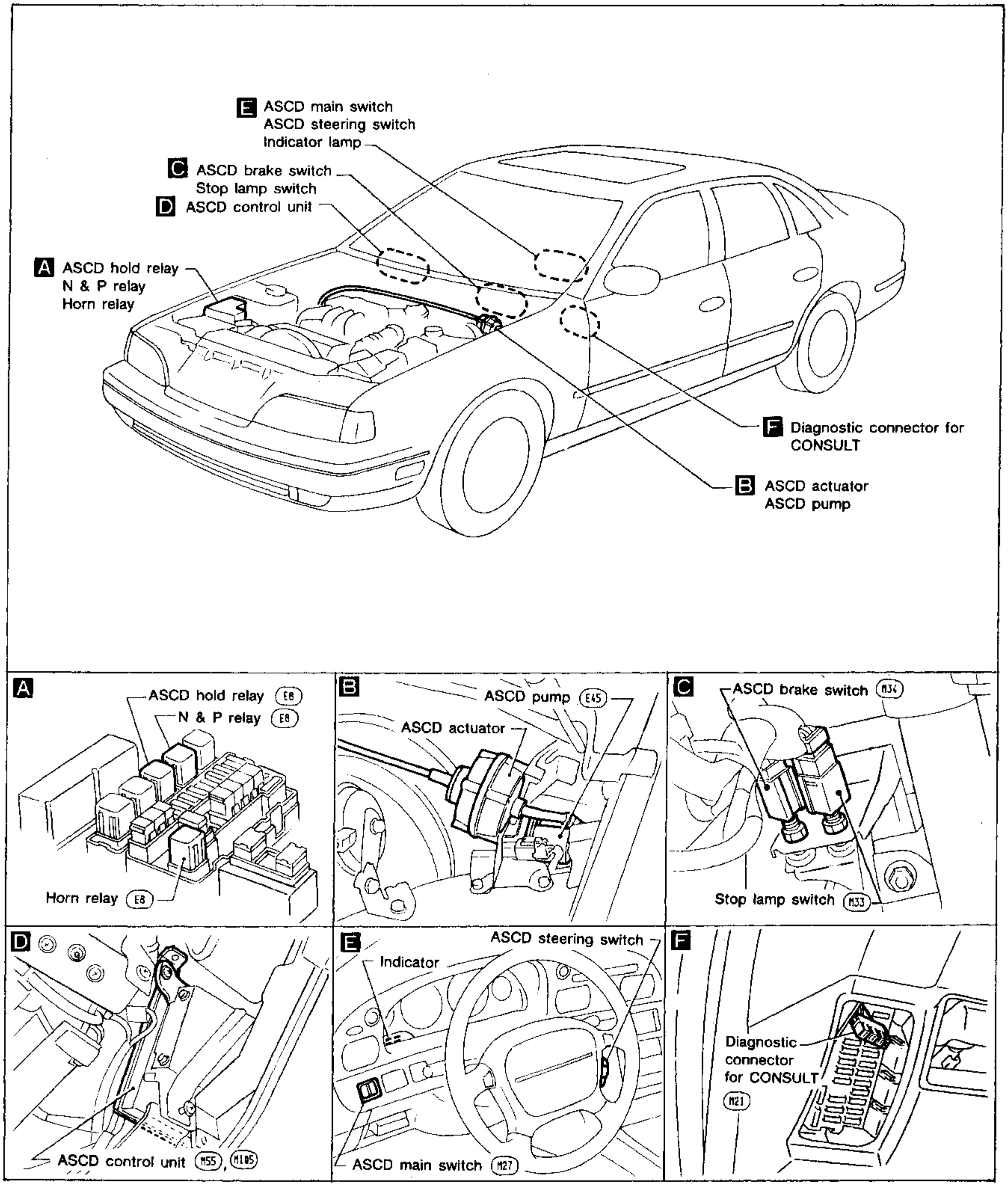
MEL722D

Auto Anti-dazzling Inside Mirror/Wiring Diagram



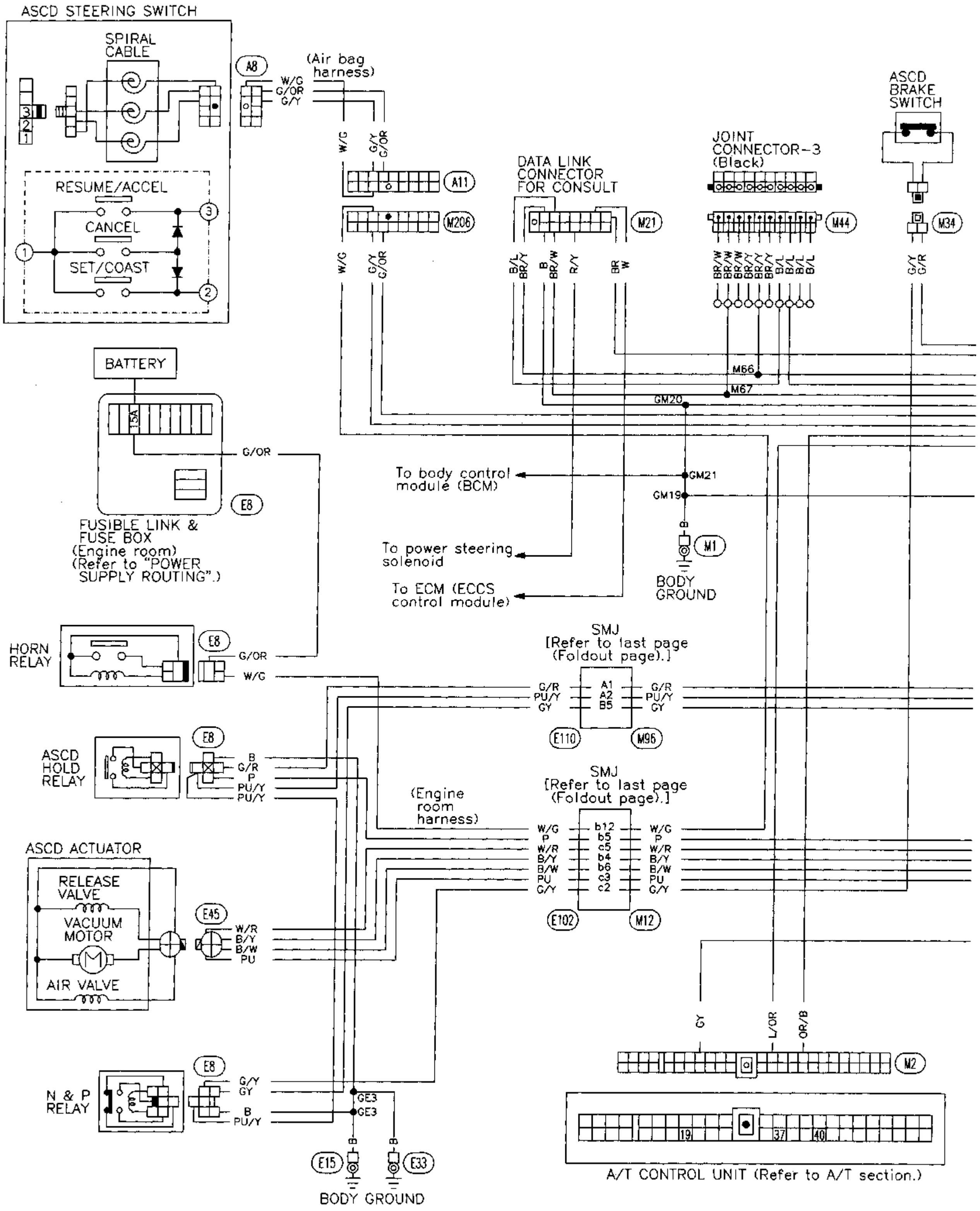
MBF521B

Component Parts and Harness Connector Location



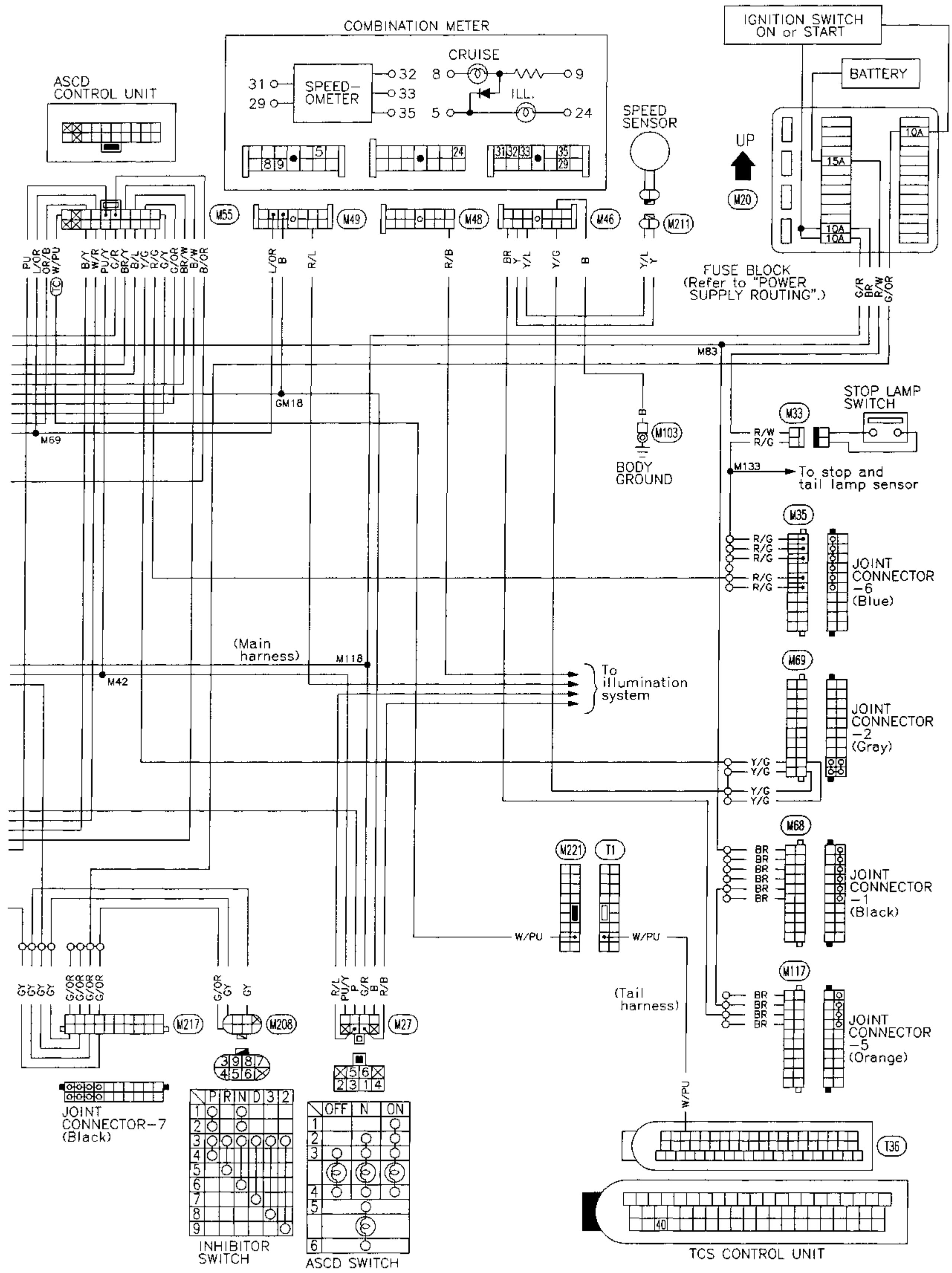
SEL945PA

Wiring Diagram

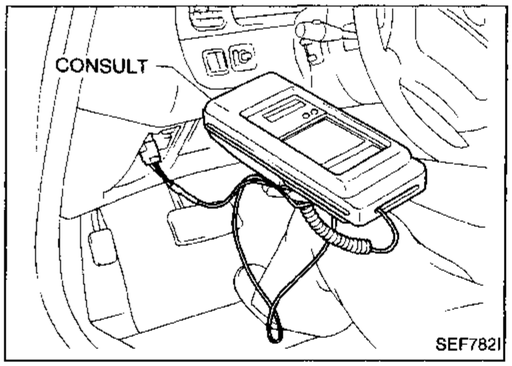


(TC): Models with TCS

Wiring Diagram (Cont'd)



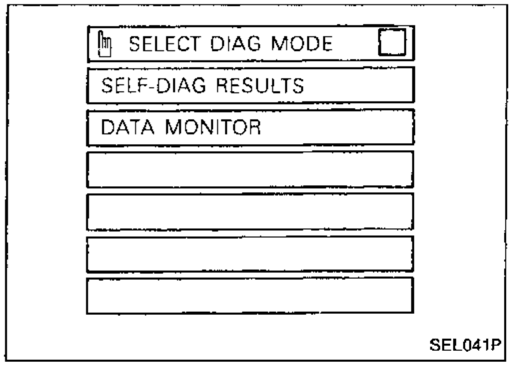
MEL827D



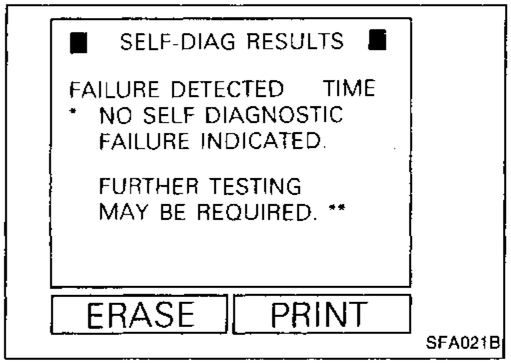
Trouble Diagnoses

CONSULT

1. Turn off ignition switch.
2. Connect "CONSULT" to data link connector for CONSULT.



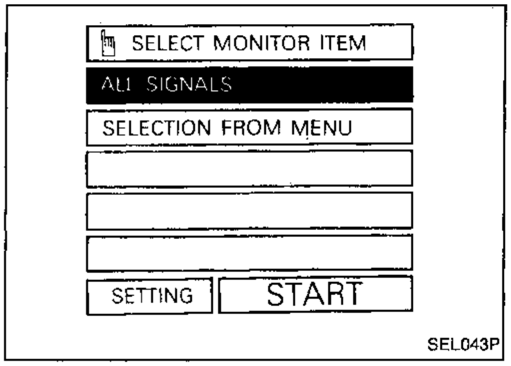
3. Turn on ignition switch.
4. Turn on ASCD main switch.
5. Touch START (on CONSULT display).
6. Touch ASCD.
7. Touch SELF-DIAG RESULTS.



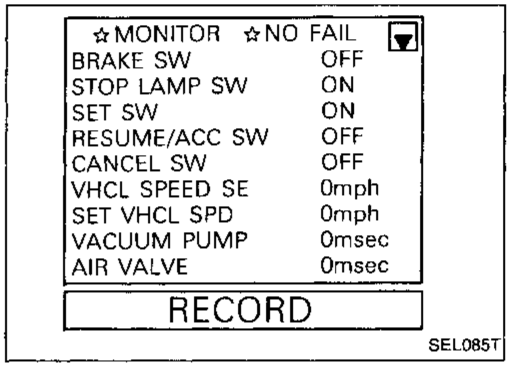
```
FAILURE DETECTED    TIME
* NO SELF DIAGNOSTIC
  FAILURE INDICATED.

  FURTHER TESTING
  MAY BE REQUIRED. **
```

- Self-diagnostic results are shown on display.
  Refer to table on the next page.



8. Touch DATA MONITOR.



```
☆MONITOR  ☆NO FAIL
BRAKE SW          OFF
STOP LAMP SW      ON
SET SW            ON
RESUME/ACC SW     OFF
CANCEL SW         OFF
VHCL SPEED SE     0mph
SET VHCL SPD      0mph
VACUUM PUMP       0msec
AIR VALVE         0msec
```

- Touch START.
- Data monitor results are shown on display.
  Refer to table on the next page.

For further information, read the CONSULT Operation Manual.

Trouble Diagnoses (Cont'd)

Self-diagnostic results

Diagnostic item	Description
* NO SELF DIAGNOSTIC FAILURE INDICATED. FURTHER TESTING MAY BE REQUIRED.**	• Even if no self diagnostic failure is indicated, further testing may be required as far as the customer complains.
POWER SUPPLY-VALVE	• The power supply circuit for the valves is open. (An abnormally high voltage is entered.)
VACUUM PUMP	• The vacuum pump circuit is open or shorted. (An abnormally high or low voltage is entered.
AIR VALVE	• The air valve circuit is open or shorted. (An abnormally high or low voltage is entered.)
VHCL SP.S/FAILSAFE	• The vehicle speed sensor or the fail-safe circuit is malfunctioning.
CONTROL UNIT	• The ASCD control unit is malfunctioning.
RELEASE VALVE	• The release valve circuit is open or shorted. (An abnormally high or low voltage is entered.)
BRAKE SW/STOP/L SW	• The brake switch or stop lamp switch is malfunctioning.

Data monitor

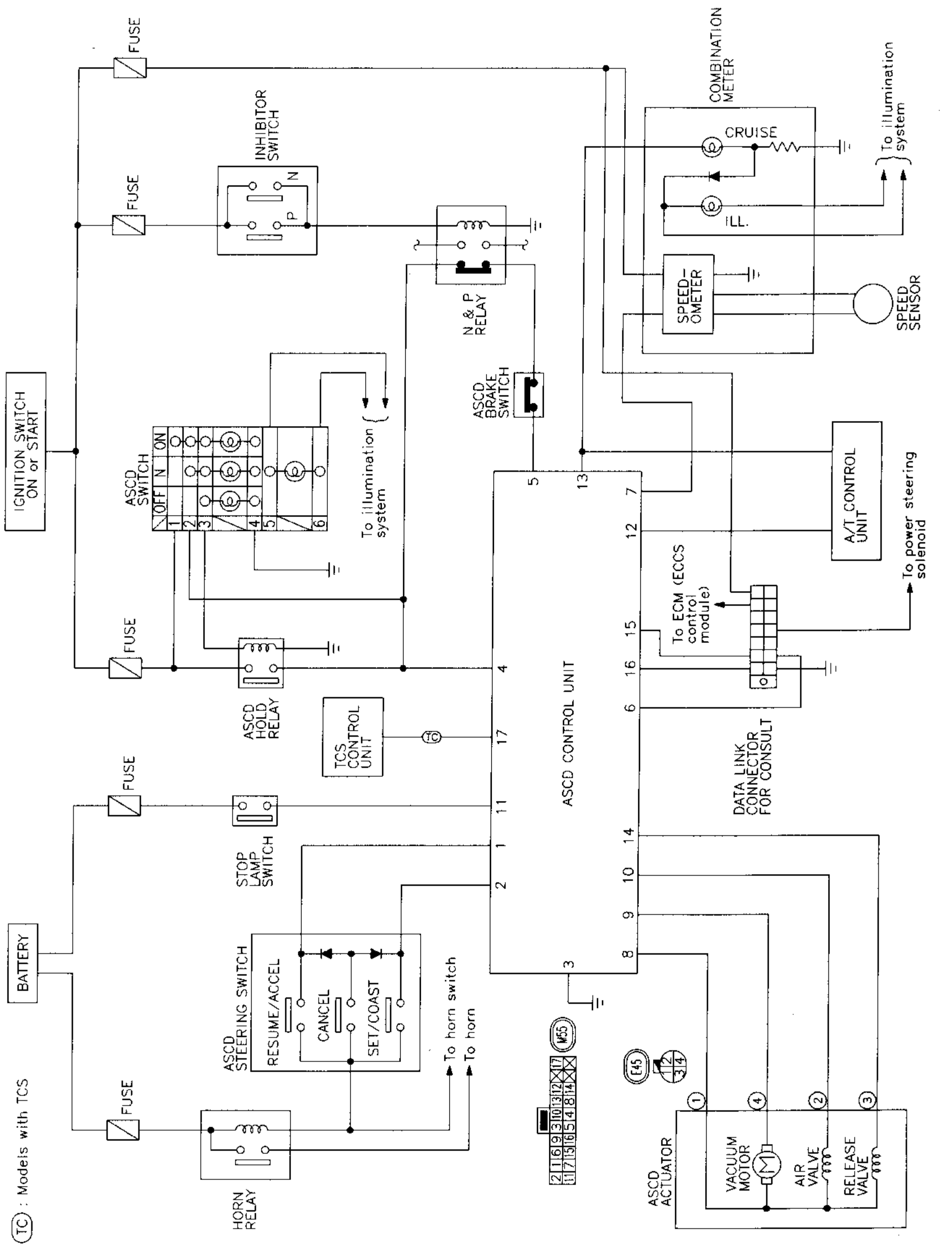
Monitored item	Description
BRAKE SW	• Indicates [ON/OFF] condition of the brake switch circuit.
STOP LAMP SW	• Indicates [ON/OFF] condition of the stop lamp switch circuit.
SET SW	• Indicates [ON/OFF] condition of the set switch circuit.
RESUME/ACC SW	• Indicates [ON/OFF] condition of the resume/accelerate switch circuit.
CANCEL SW	• Indicates [ON/OFF] condition of the cancel circuit.
VHCL SPEED SE	• The present vehicle speed computed from the vehicle speed sensor signal is displayed.
SET VHCL SPD	• The preset vehicle speed is displayed.
VACUUM PUMP	• The operation time of the vacuum pump is displayed.
AIR VALVE	• The operation time of the air valve is displayed.
PW SUP-VALVE	• Indicates [ON/OFF] condition of the circuit for the air valve and the release valve.
CRUISE LAMP	• Indicates [ON/OFF] condition of the cruise lamp circuit.
A/T OD CANCEL	• Indicates [ON/OFF] condition of the OD cancel circuit.
FAIL SAFE-LOW	• The fail-safe (LOW) circuit function is displayed.
FAIL SAFE-SPD	• The fail-safe (SPEED) circuit function is displayed.

SYMPTOM CHART

PROCEDURE	Diagnostic Procedure								Electrical Components Inspection						
REFERENCE PAGE	EL-242	EL-245	EL-245	EL-246	EL-246	EL-247	EL-249	EL-251	EL-252	EL-253	EL-254	EL-254	EL-254	EL-254	EL-254
SYMPTOM	Diagnostic Procedure 1	Diagnostic Procedure 2	Diagnostic Procedure 3	Diagnostic Procedure 4	Diagnostic Procedure 5	Diagnostic Procedure 6	Diagnostic Procedure 7	Diagnostic Procedure 8	ASCD wire adjustment	ASCD actuator/ASCD pump	ASCD main switch	ASCD steering switch	ASCD brake switch and stop lamp switch	Inhibitor switch	Vehicle speed sensor
ASCD control unit cannot be set properly.	○									○	○	○	○	○	○
Engine hunts		○							○	○					
Large difference between set speed and actual vehicle speed.			○						○	○					
Deceleration is greatest immediately after ASCD has been set.				○					○	○					
ACCEL switch will not operate.	○				○							○			
RESUME switch will not operate.	○					○						○	○		
Set speed cannot be canceled.							○		○	○			○		
"CRUISE" indicator lamp blinks.								○		○		○	○		

Trouble Diagnoses (Cont'd)

CIRCUIT DIAGRAM FOR QUICK PINPOINT CHECK

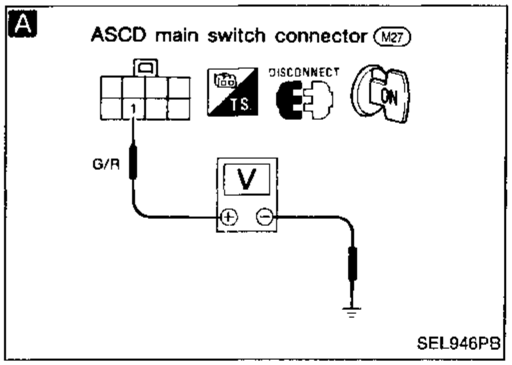


MEL828D

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

SYMPTOM: ASCD control cannot be set.



Turn ASCD main switch "OFF" and "ON" to make sure indicator illuminates.

NG ↓ A

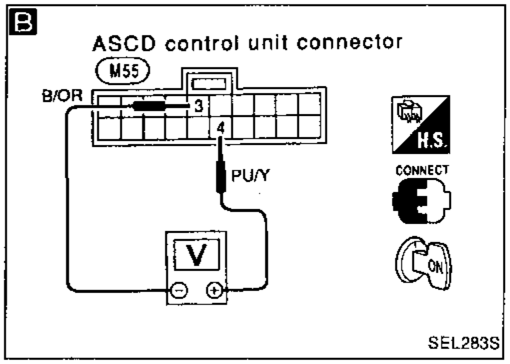
A CHECK POWER SUPPLY FOR ASCD MAIN SWITCH.

1. Disconnect main switch harness connector.
2. Do approx. 12 volts exist between main switch harness terminal ① and body ground?

No. → Check fuse and harness.

Yes → CHECK ASCD MAIN SWITCH. Refer to "Electrical Components Inspection". (EL-254) CHECK ASCD HOLD RELAY.

OK ↓ B

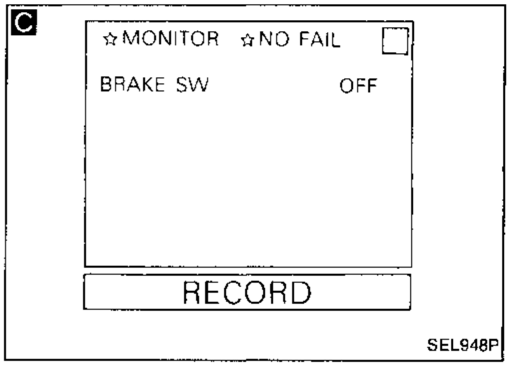


B CHECK POWER SUPPLY CIRCUIT FOR ASCD CONTROL UNIT.

1. Turn ASCD main switch "ON".
2. Check voltage between control unit harness terminal ④ and ③.
   Battery voltage should exist.

NG → Check continuity between control unit harness terminal ④ and ASCD hold relay.

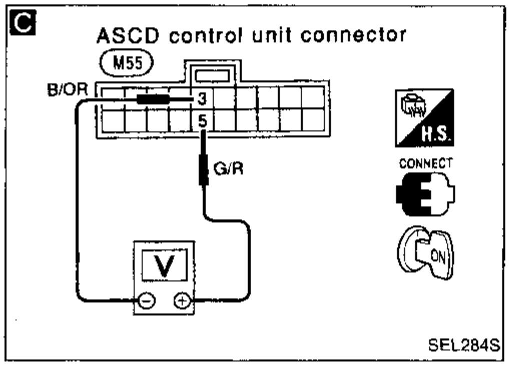
OK ↓ C



☆MONITOR ☆NO FAIL ☐

BRAKE SW OFF

RECORD



C CHECK CUT-OFF CIRCUIT FOR ASCD CONTROL UNIT.

See "BRAKE SW" in "Data monitor" mode.
BRAKE SWITCH
When switch is depressed: OFF
When switch is released: ON

OR

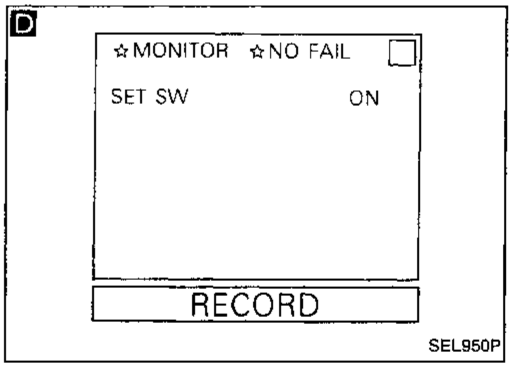
Check voltage between control unit harness terminals ⑤ and ③.
Battery voltage should exist.

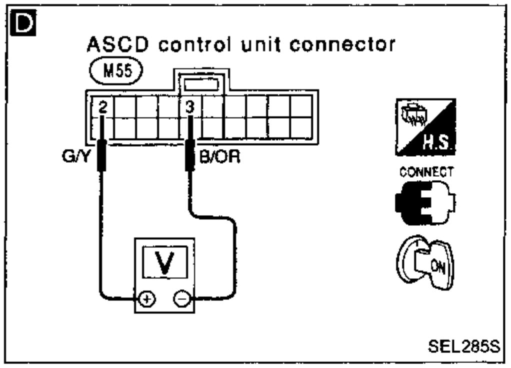
NG → CHECK ASCD BRAKE SWITCH AND INHIBITOR SWITCH. Refer to "Electrical Components Inspection". (EL-254) CHECK N & P RELAY.

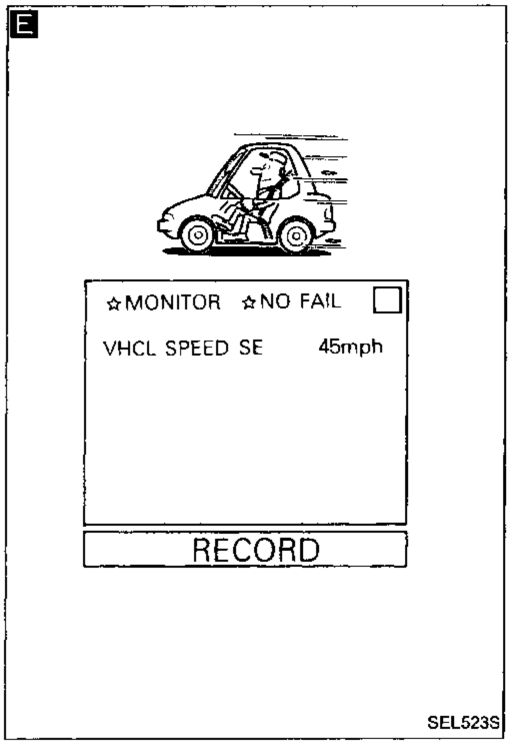
OK ↓

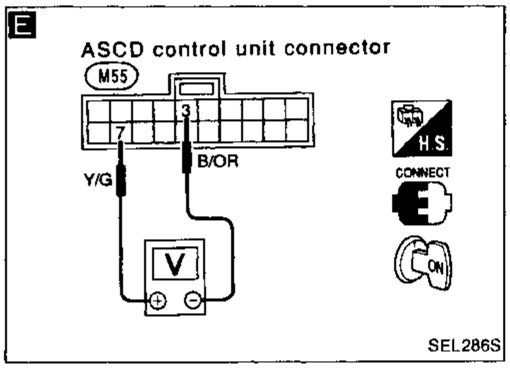
Ⓐ (Next page)

Trouble Diagnoses (Cont'd)









Ⓐ

D

CHECK SET/COAST SWITCH CIRCUIT FOR ASCD CONTROL UNIT.

See "SET SW" in "Data monitor" mode.

SET SW

When switch is pressed: ON

When switch is released: OFF

OR

1. Push and hold SET/COAST button on ASCD steering switch.
2. Check voltage between control unit harness terminals ② and ③.

Battery voltage should exist.

NG → Does horn work?

- No → Check fuse and horn relay.
- Yes → CHECK ASCD STEERING SWITCH. Refer to "Electrical Components Inspection". (EL-254)

OK

E

CHECK VEHICLE SPEED SENSOR CIRCUIT.

See "VHCL SPEED SE" in "Data monitor" mode while driving.

OR

1. Apply wheel chocks and jack up rear of vehicle.
2. Connect voltmeter between control unit harness terminals ⑦ and ③.
3. Slowly turn front wheel.
4. Check deflection of voltmeter pointer.

NG → CHECK VEHICLE SPEED SENSOR. Refer to "Electrical Components Inspection". (EL-254)

OK

CHECK ASCD ACTUATOR/ASCD PUMP. Refer to "Electrical Components Inspection". (EL-253)

NG → Replace ASCD actuator/ASCD pump.

OK

Ⓑ

(Next page)

GI
MA
EM
LC
EF & EC
FE
AT
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

Trouble Diagnoses (Cont'd)

Ⓑ

F

CHECK OUTPUT FOR ASCD ACTUATOR/ASCD PUMP.

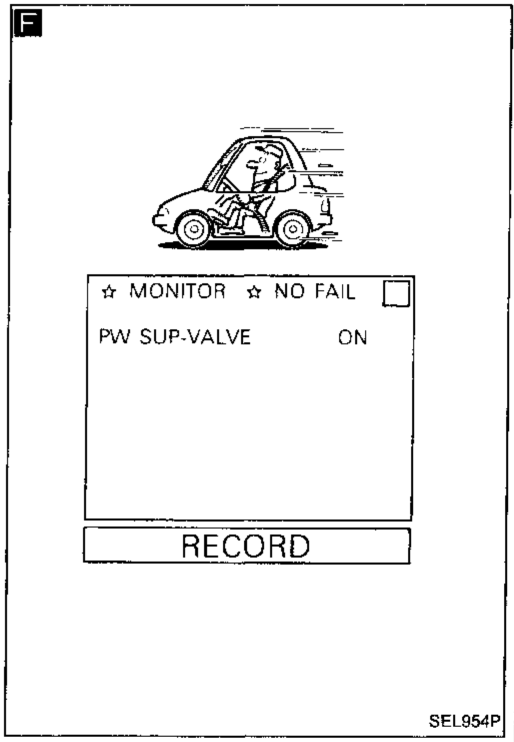
1. Read out "PW SUP-VALVE" in "Data monitor" mode while driving.
   PW SUP-VALVE:
   ON (When ASCD is operating.)
   OFF (When ASCD is not operating.)

OR

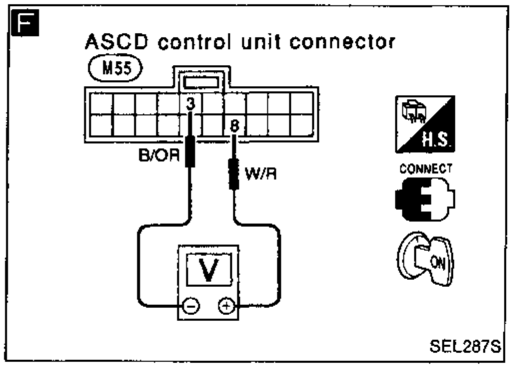
1. Check voltage between control unit harness terminals ⑧ and ③.
   Voltage is 0V

NG → Replace ASCD control unit.

OK ↓



SEL954P



SEL287S

G

CHECK ASCD ACTUATOR/ASCD PUMP CIRCUIT.

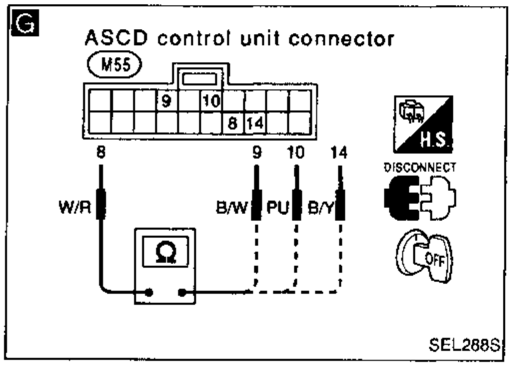
1. Disconnect ASCD control unit connector.
2. Measure resistance between control unit harness terminals ⑧ and ⑨, ⑩, ⑭.

Terminals		Resistance [Ω]
⑧	⑨	Approx. 8 - 45
	⑩	Approx. 65
	⑭	Approx. 65

OK → Replace ASCD control unit.

NG ↓

Repair short or open circuit in ASCD actuator/ASCD pump harness.

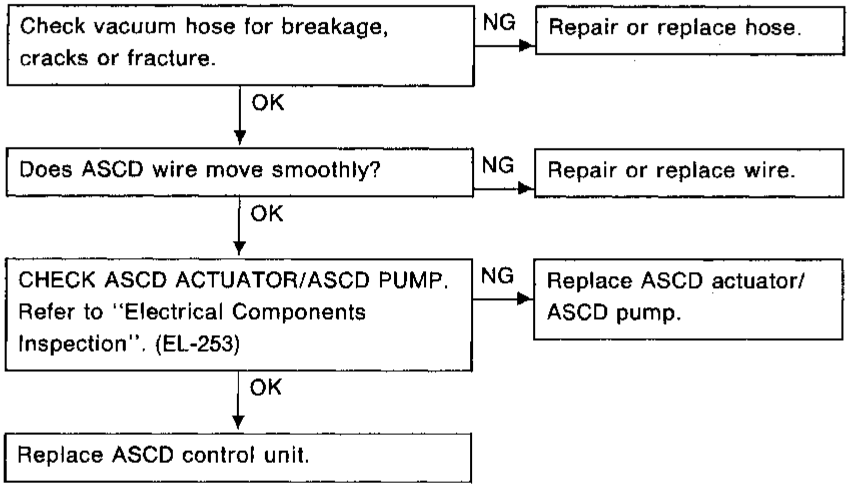


SEL288S

Trouble Diagnoses (Cont'd)

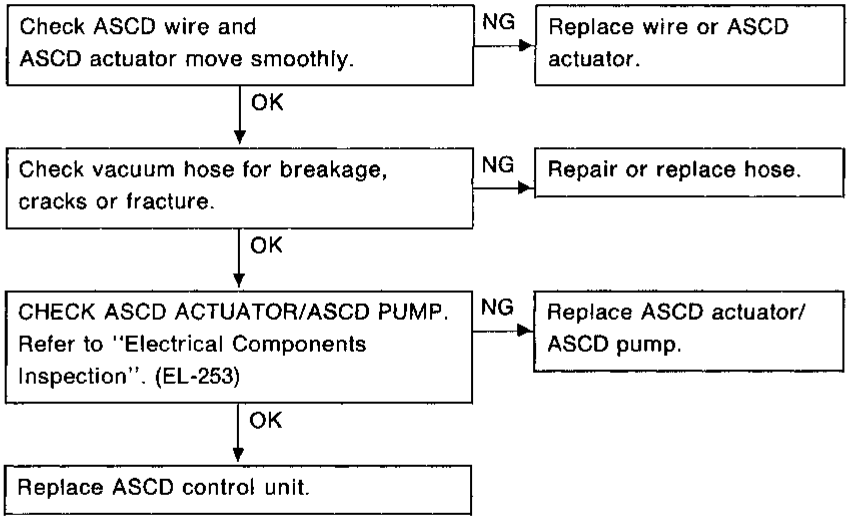
DIAGNOSTIC PROCEDURE 2

SYMPTOM: Engine hunts.



DIAGNOSTIC PROCEDURE 3

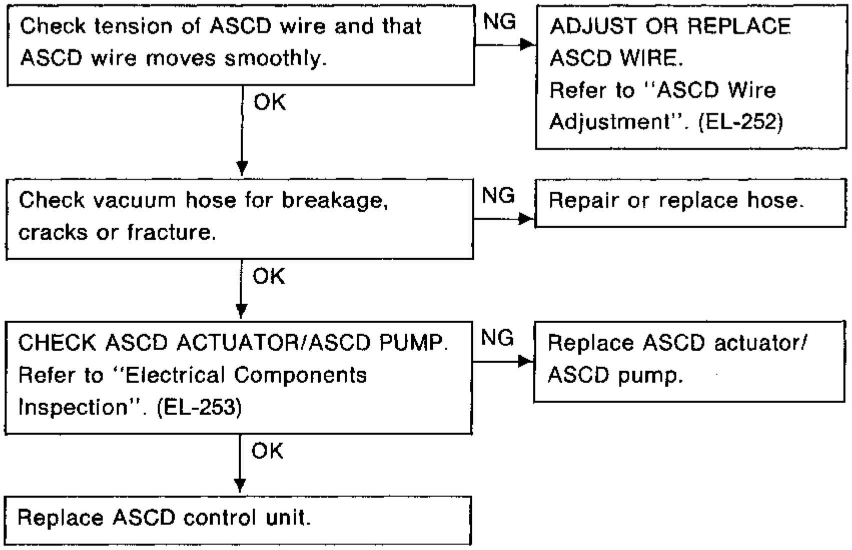
SYMPTOM: Large difference between set vehicle speed and actual speed.



Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

SYMPTOM: Deceleration is greatest immediately after ASCD has been set.

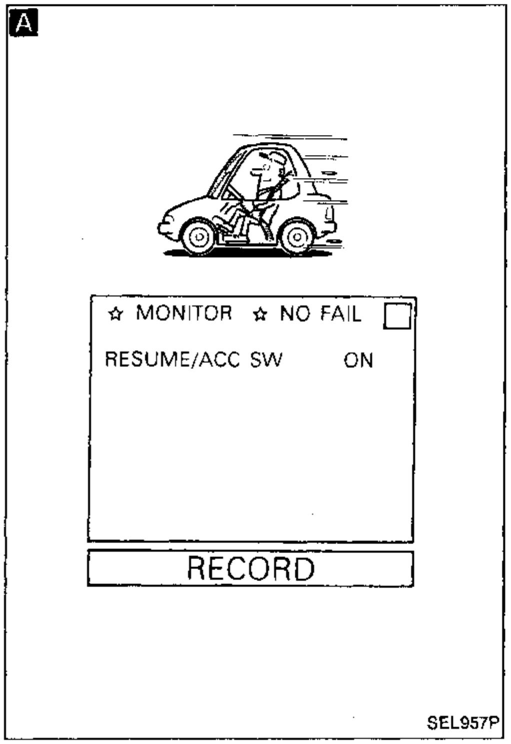


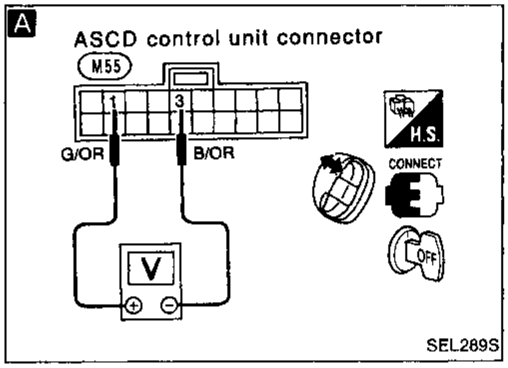
Check tension of ASCD wire and that ASCD wire moves smoothly.
- NG → ADJUST OR REPLACE ASCD WIRE. Refer to "ASCD Wire Adjustment". (EL-252)
- OK ↓

Check vacuum hose for breakage, cracks or fracture.
- NG → Repair or replace hose.
- OK ↓

CHECK ASCD ACTUATOR/ASCD PUMP. Refer to "Electrical Components Inspection". (EL-253)
- NG → Replace ASCD actuator/ ASCD pump.
- OK ↓

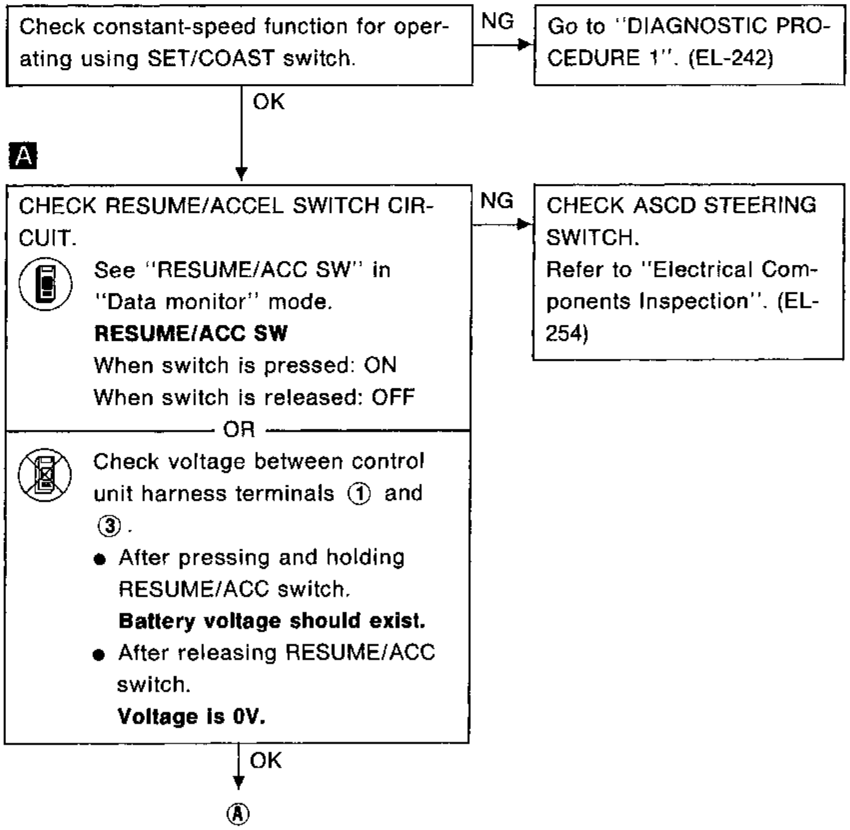
Replace ASCD control unit.





DIAGNOSTIC PROCEDURE 5

SYMPTOM: ACCEL switch will not operate.



Check constant-speed function for operating using SET/COAST switch.
- NG → Go to "DIAGNOSTIC PROCEDURE 1". (EL-242)
- OK ↓

A

CHECK RESUME/ACCEL SWITCH CIRCUIT.

See "RESUME/ACC SW" in "Data monitor" mode.

RESUME/ACC SW

When switch is pressed: ON

When switch is released: OFF

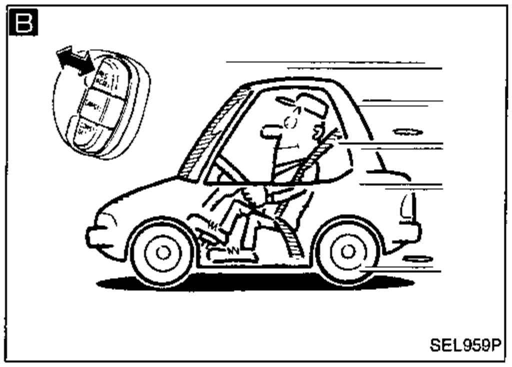
OR

Check voltage between control unit harness terminals ① and ③.
- After pressing and holding RESUME/ACC switch. **Battery voltage should exist.**
- After releasing RESUME/ACC switch. **Voltage is 0V.**

- NG → CHECK ASCD STEERING SWITCH. Refer to "Electrical Components Inspection". (EL-254)
- OK ↓

Ⓐ

Trouble Diagnoses (Cont'd)



Ⓐ

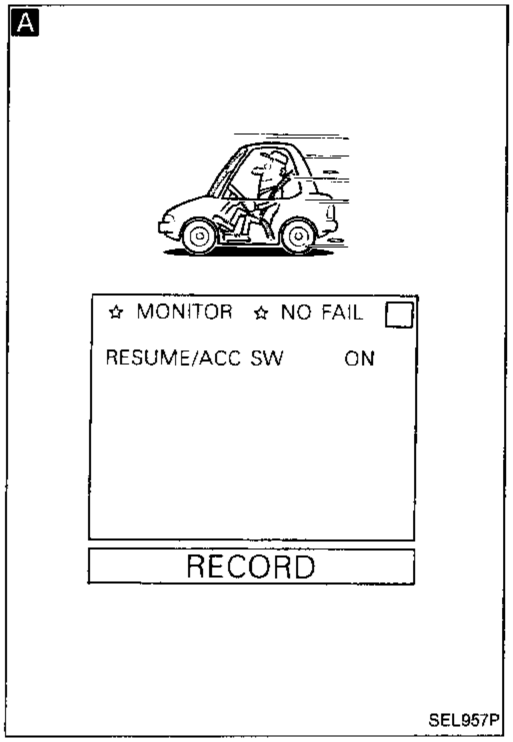
B Does vehicle accelerate when RESUME/ACCEL switch is pressed?

- No → Replace control unit.
- Yes ↓

B Does vehicle maintain the new (faster) speed when RESUME/ACCEL switch is released?

- No → Replace control unit.
- Yes ↓

System is OK.



☆ MONITOR ☆ NO FAIL ☐

RESUME/ACC SW ON

RECORD

DIAGNOSTIC PROCEDURE 6

SYMPTOM: RESUME switch will not operate.

Check constant-speed function for operation using SET/COAST switch.

- NG → Go to "DIAGNOSTIC PROCEDURE 1". (EL-242)
- OK ↓

A CHECK RESUME/ACCEL SWITCH CIRCUIT.

See "RESUME/ACC SW" in "Data monitor" mode.

RESUME/ACC SW

When switch is pressed: ON

When switch is released: OFF

OR

Check voltage between control unit harness terminals ① and ③.

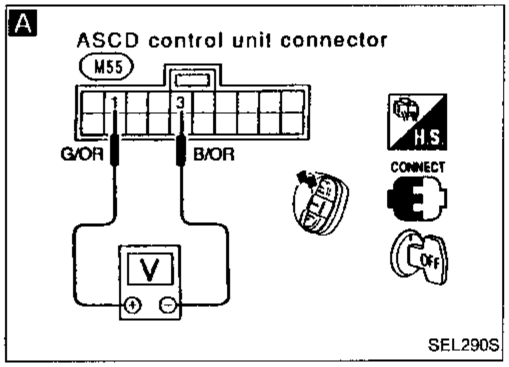
- After pressing and holding RESUME/ACC switch. **Battery voltage should exist.**
- After releasing RESUME/ACC switch. **Voltage is 0V.**

NG → CHECK ASCD STEERING SWITCH. Refer to "Electrical Components Inspection". (EL-254)

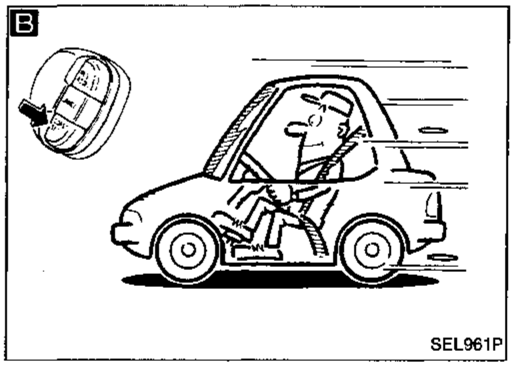
OK ↓

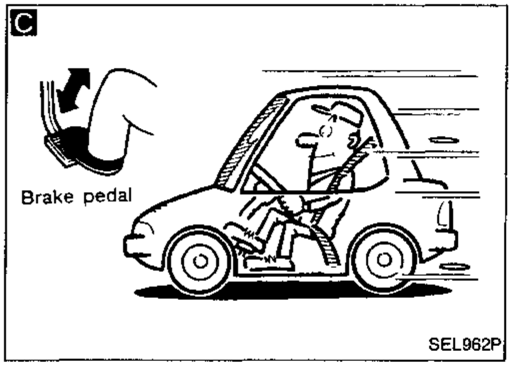
Ⓒ

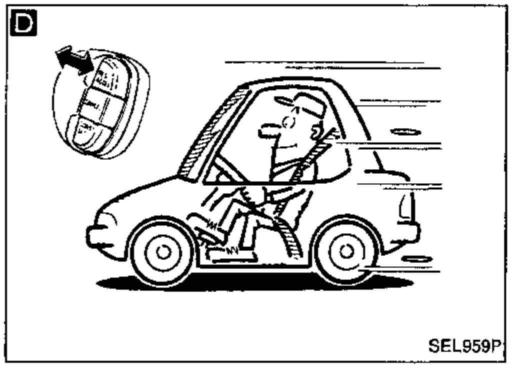
(Next page)

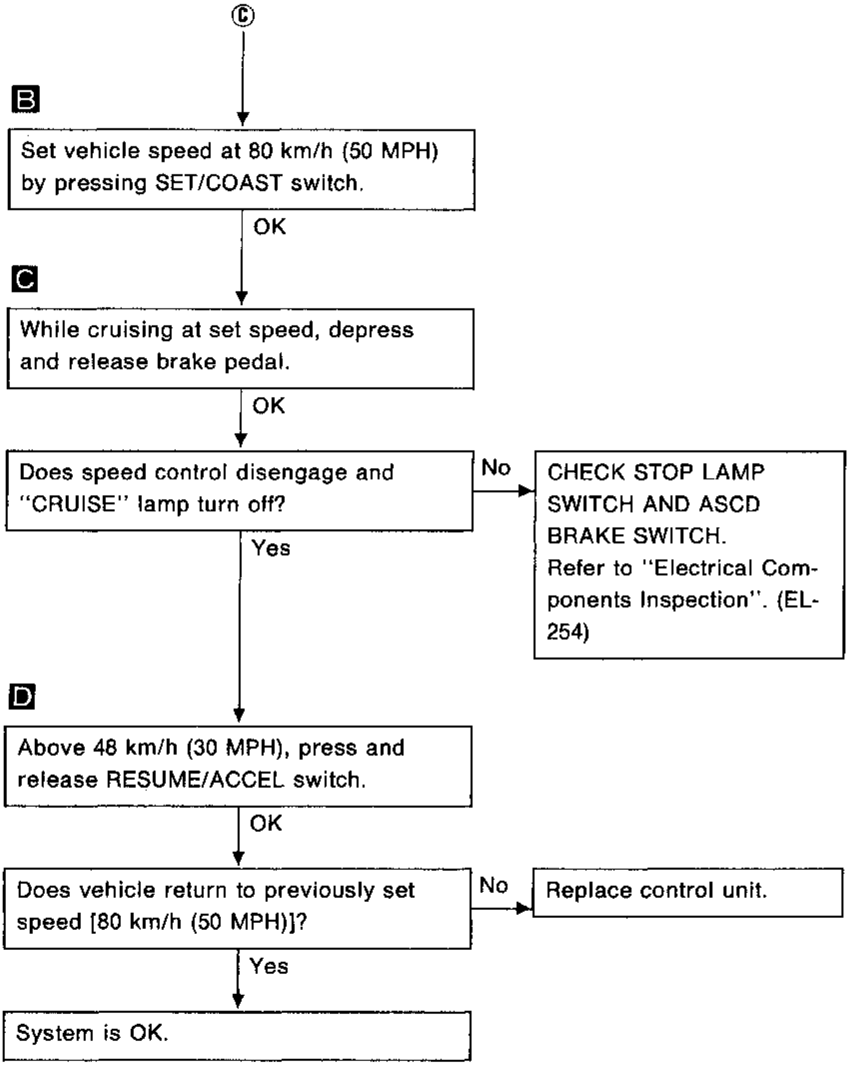


Trouble Diagnoses (Cont'd)









Ⓒ

B

Set vehicle speed at 80 km/h (50 MPH) by pressing SET/COAST switch.

OK

C

While cruising at set speed, depress and release brake pedal.

OK

Does speed control disengage and "CRUISE" lamp turn off?

No → CHECK STOP LAMP SWITCH AND ASCD BRAKE SWITCH.
Refer to "Electrical Components Inspection". (EL-254)

Yes

D

Above 48 km/h (30 MPH), press and release RESUME/ACCEL switch.

OK

Does vehicle return to previously set speed [80 km/h (50 MPH)]?

No → Replace control unit.

Yes

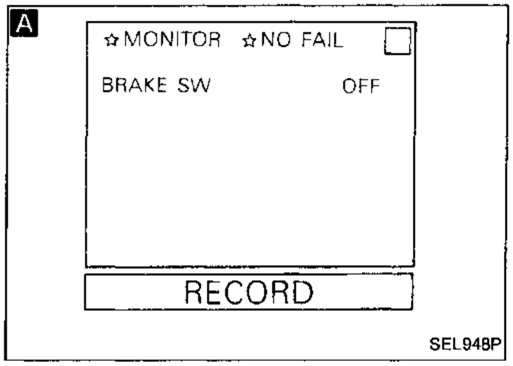
System is OK.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7

SYMPTOM: Set speed cannot be cancelled.

A



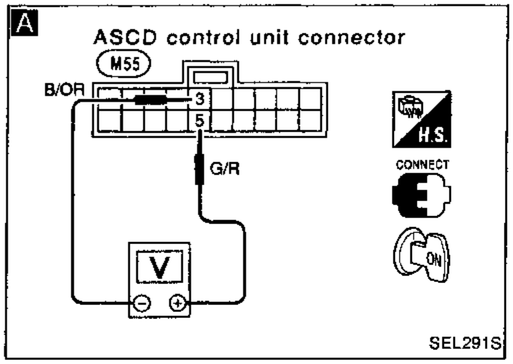
☆MONITOR ☆NO FAIL ☐

BRAKE SW OFF

RECORD

SEL948P

A



SEL291S

A

CHECK ASCD BRAKE AND INHIBITOR SWITCH CIRCUIT.

1. Turn ASCD main switch "ON".
2. See "BRAKE SW" in "Data monitor" mode.

BRAKE SW

When brake pedal is released: ON

When brake pedal is depressed: OFF

OR

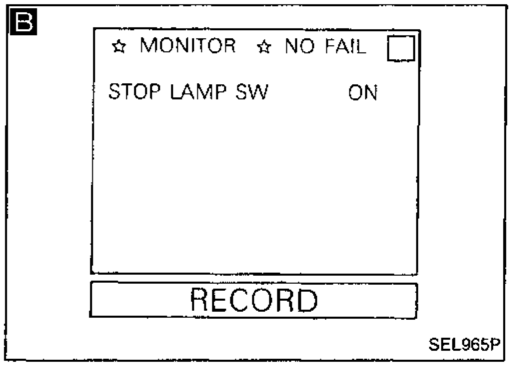
2. Check voltage between control unit harness terminals ⑤ and ③.

Conditions		Voltage [V]
ASCD brake switch	Depressed	0
	Released	Approx. 12
A/T shift lever position is at any position except N or P.		Approx. 12
A/T shift lever position is at N or P.		0

NG → CHECK ASCD BRAKE and INHIBITOR SWITCH. Refer to "Electrical Components Inspection". (EL-254)

OK ↓

B



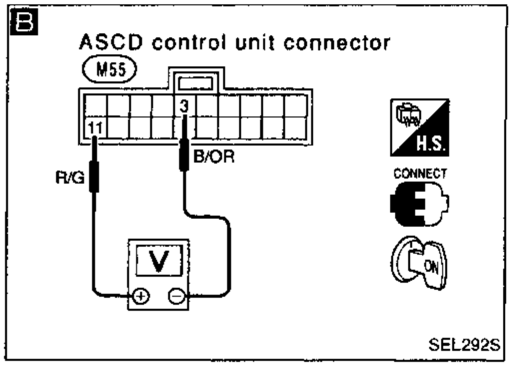
☆ MONITOR ☆ NO FAIL ☐

STOP LAMP SW ON

RECORD

SEL965P

B



SEL292S

B

CHECK STOP LAMP SWITCH CIRCUIT.

See "STOP LAMP SW" in "Data monitor" mode.

STOP LAMP SW

When brake pedal is released: OFF

When brake pedal is depressed: ON

OR

Check voltage between control unit harness terminals ⑪ and ③.

Condition		Voltage [V]
Stop lamp switch	Depressed	Approx. 12
	Released	0

NG → CHECK STOP LAMP SWITCH. Refer to "Electrical Components Inspection". (EL-254)

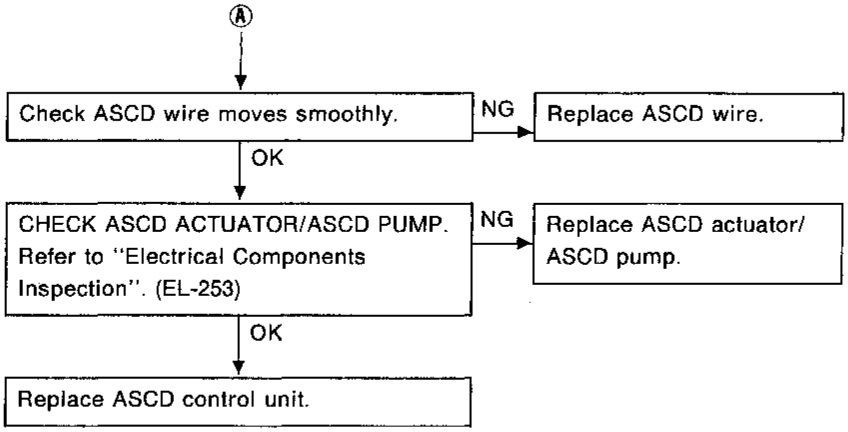
OK ↓

Ⓐ

(Next page)

GI
MA
EM
LC
EF & EC
FE
AT
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

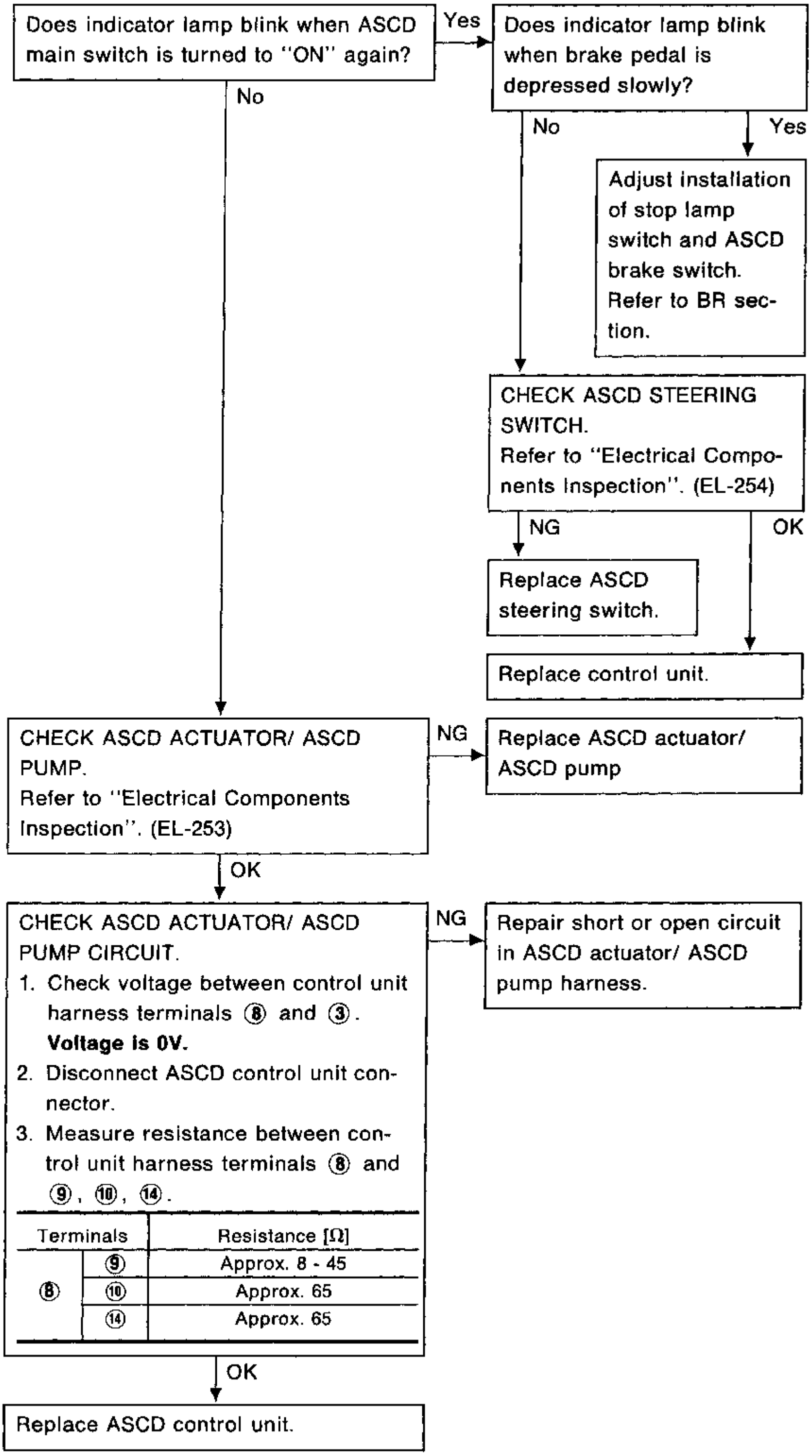
Trouble Diagnoses (Cont'd)



Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 8

SYMPTOM: "CRUISE" indicator lamp blinks.



Does indicator lamp blink when ASCD main switch is turned to "ON" again?

Yes

Does indicator lamp blink when brake pedal is depressed slowly?

Yes

Adjust installation of stop lamp switch and ASCD brake switch. Refer to BR section.

No

CHECK ASCD STEERING SWITCH.
Refer to "Electrical Components Inspection". (EL-254)

NG

Replace ASCD steering switch.

OK

Replace control unit.

No

CHECK ASCD ACTUATOR/ ASCD PUMP.
Refer to "Electrical Components Inspection". (EL-253)

NG

Replace ASCD actuator/ ASCD pump

OK

CHECK ASCD ACTUATOR/ ASCD PUMP CIRCUIT.

1. Check voltage between control unit harness terminals ⑧ and ③.
   Voltage is 0V.
2. Disconnect ASCD control unit connector.
3. Measure resistance between control unit harness terminals ⑧ and ⑨, ⑩, ⑭.

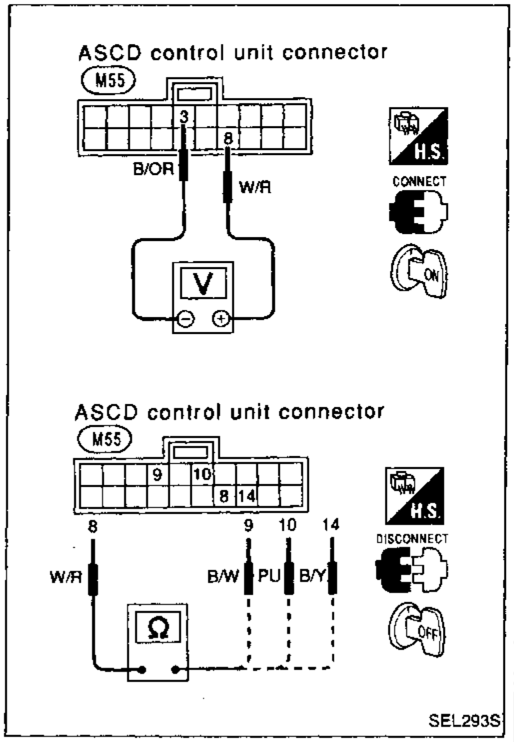
Terminals		Resistance [Ω]
⑧	⑨	Approx. 8 - 45
	⑩	Approx. 65
	⑭	Approx. 65

NG

Repair short or open circuit in ASCD actuator/ ASCD pump harness.

OK

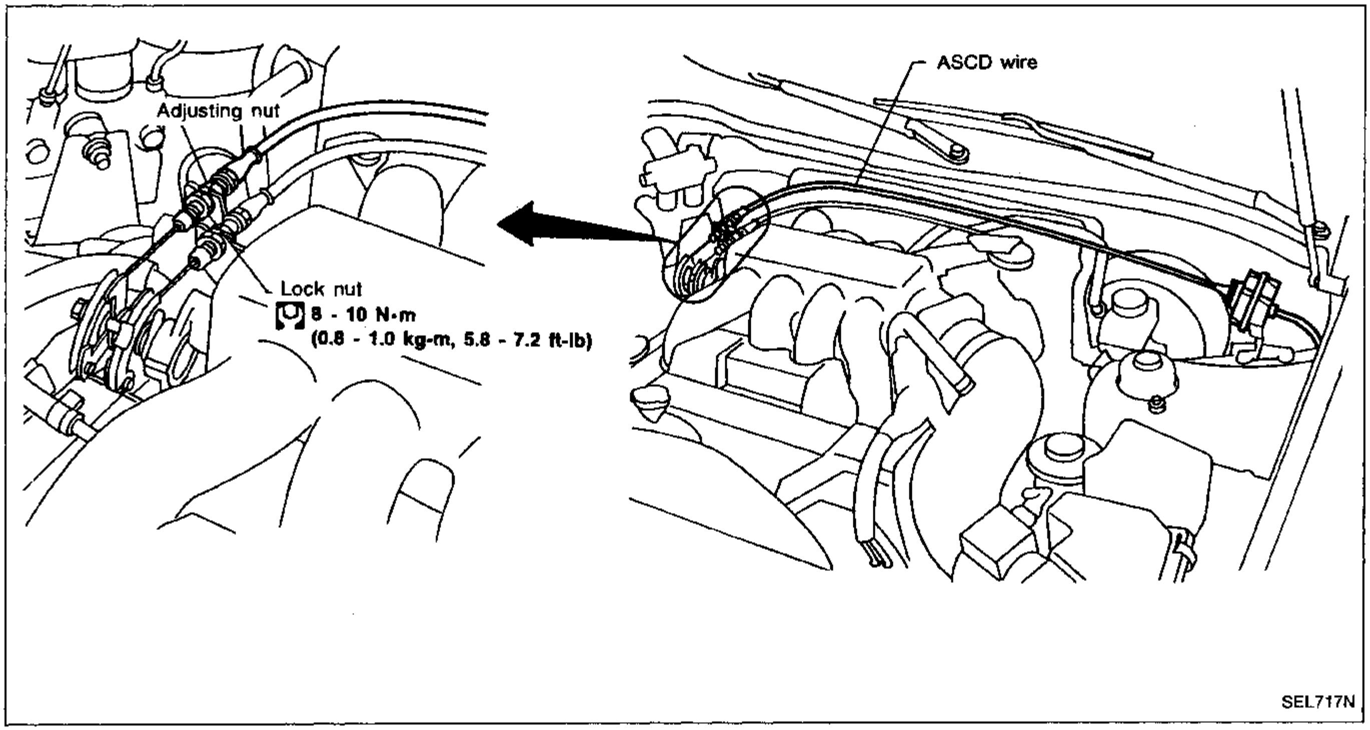
Replace ASCD control unit.



SEL293S

Trouble Diagnoses (Cont'd)

ASCD WIRE ADJUSTMENT



CAUTION:

- **Be careful not to twist ASCD wire when removing it.**
- **Do not tense ASCD wire excessively during adjustment.**

Adjust the tension of ASCD wire in the following manner.

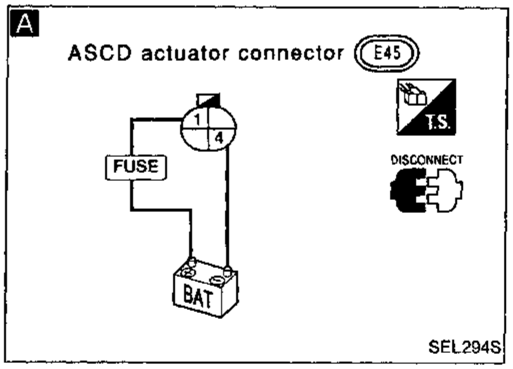
1. Loosen lock and adjusting nuts.
2. Make sure that accelerator wire is properly adjusted. (Refer to FE section, "ACCELERATOR CONTROL SYSTEM".)
3. Tighten adjusting nut until throttle drum starts moving.
4. Loosen adjusting nut again 1/2 to 1 turn.
5. Tighten lock nut.

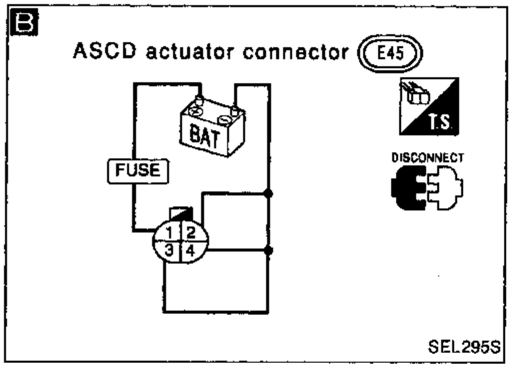
Trouble Diagnoses (Cont'd)

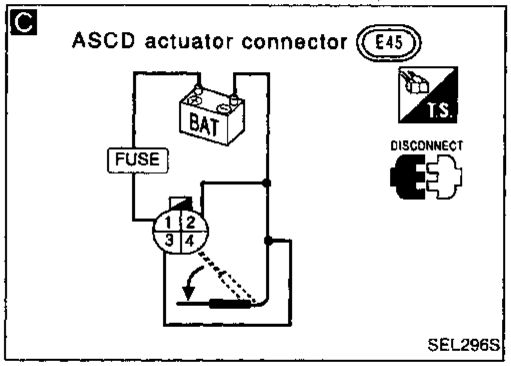
ELECTRICAL COMPONENTS INSPECTION

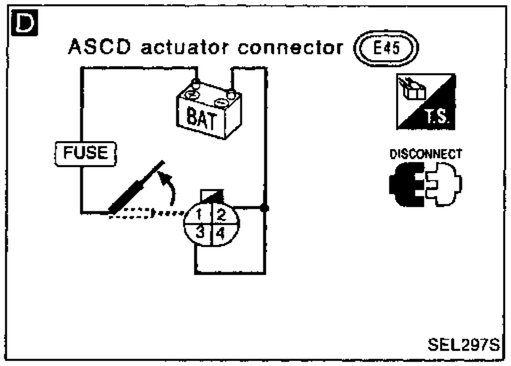
ASCD actuator/ASCD pump

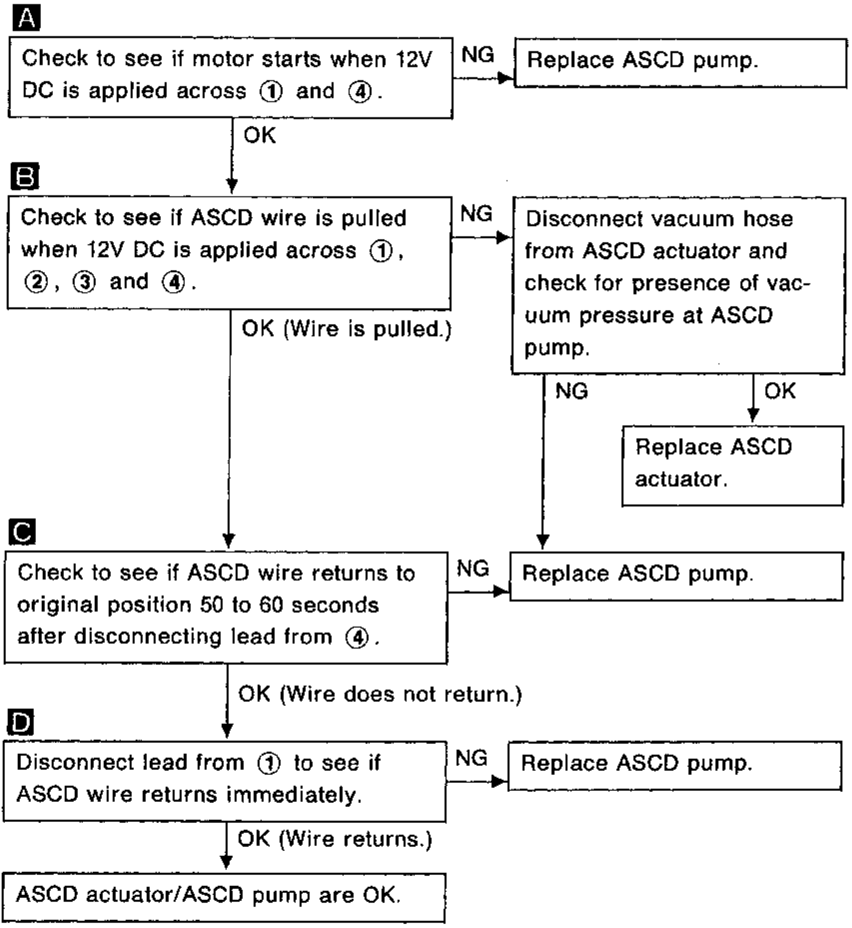
1. Disconnect ASCD actuator/ASCD pump connector.
2. Check ASCD actuator/ASCD pump operations as shown.











A

Check to see if motor starts when 12V DC is applied across ① and ④.

NG → Replace ASCD pump.

OK ↓

B

Check to see if ASCD wire is pulled when 12V DC is applied across ①, ②, ③ and ④.

NG → Disconnect vacuum hose from ASCD actuator and check for presence of vacuum pressure at ASCD pump.

- NG ↓ (to C's "Replace ASCD pump.")
- OK ↓ Replace ASCD actuator.

OK (Wire is pulled.) ↓

C

Check to see if ASCD wire returns to original position 50 to 60 seconds after disconnecting lead from ④.

NG → Replace ASCD pump.

OK (Wire does not return.) ↓

D

Disconnect lead from ① to see if ASCD wire returns immediately.

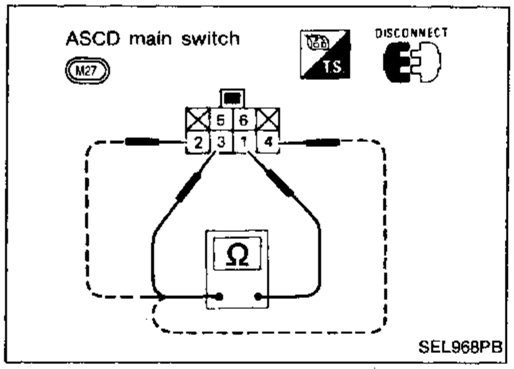
NG → Replace ASCD pump.

OK (Wire returns.) ↓

ASCD actuator/ASCD pump are OK.

GI
MA
EM
LC
EF & EC
FE
AT
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

Trouble Diagnoses (Cont'd)

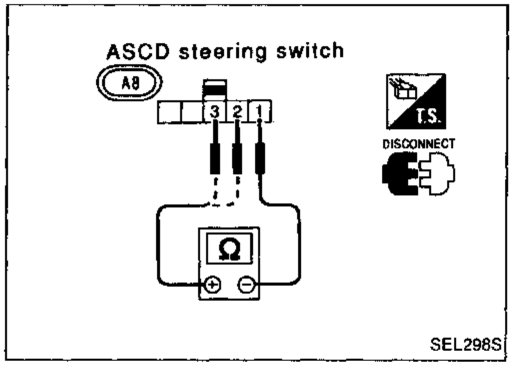


SEL968PB

ASCD main switch

Check continuity between terminals by pushing switch to each position.

Switch position	Terminals					
	1	2	3	4	5	6
ON	○	○	○	○		
N		○	○	○	ILL. ○	○
OFF						

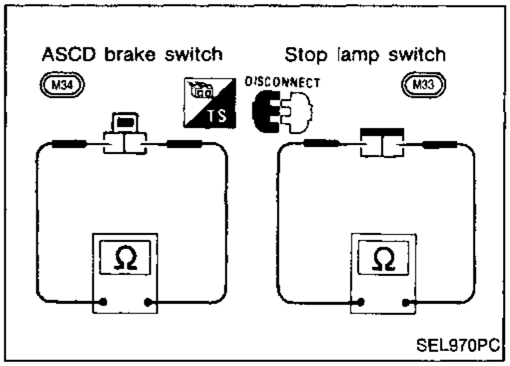


SEL298S

ASCD steering switch

Check continuity between terminals by pushing each button.

Button	Terminals		
	1	2	3
SET/COAST	○	○	
RESUME/ACCEL	○		○
CANCEL	○	▶○	
	○	▶	○

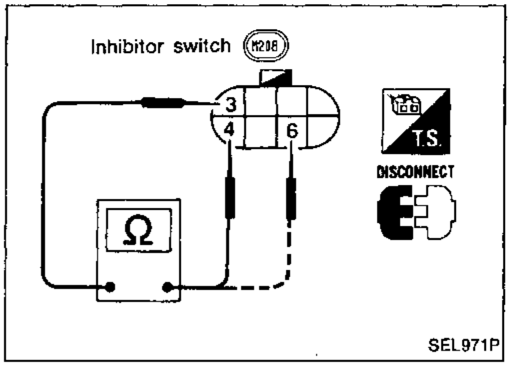


SEL970PC

ASCD brake switch and stop lamp switch

Condition	Continuity	
	ASCD brake switch	Stop lamp switch
When brake pedal is depressed	No	Yes
When brake pedal is released	Yes	No

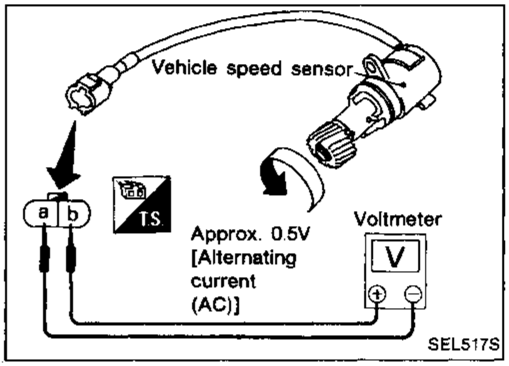
Check each switch after adjusting brake pedal — refer to BR section.



SEL971P

Inhibitor switch

Condition	Continuity
When shift lever position is "N" or "P"	Yes
When shift lever position is any position except "N" or "P"	No

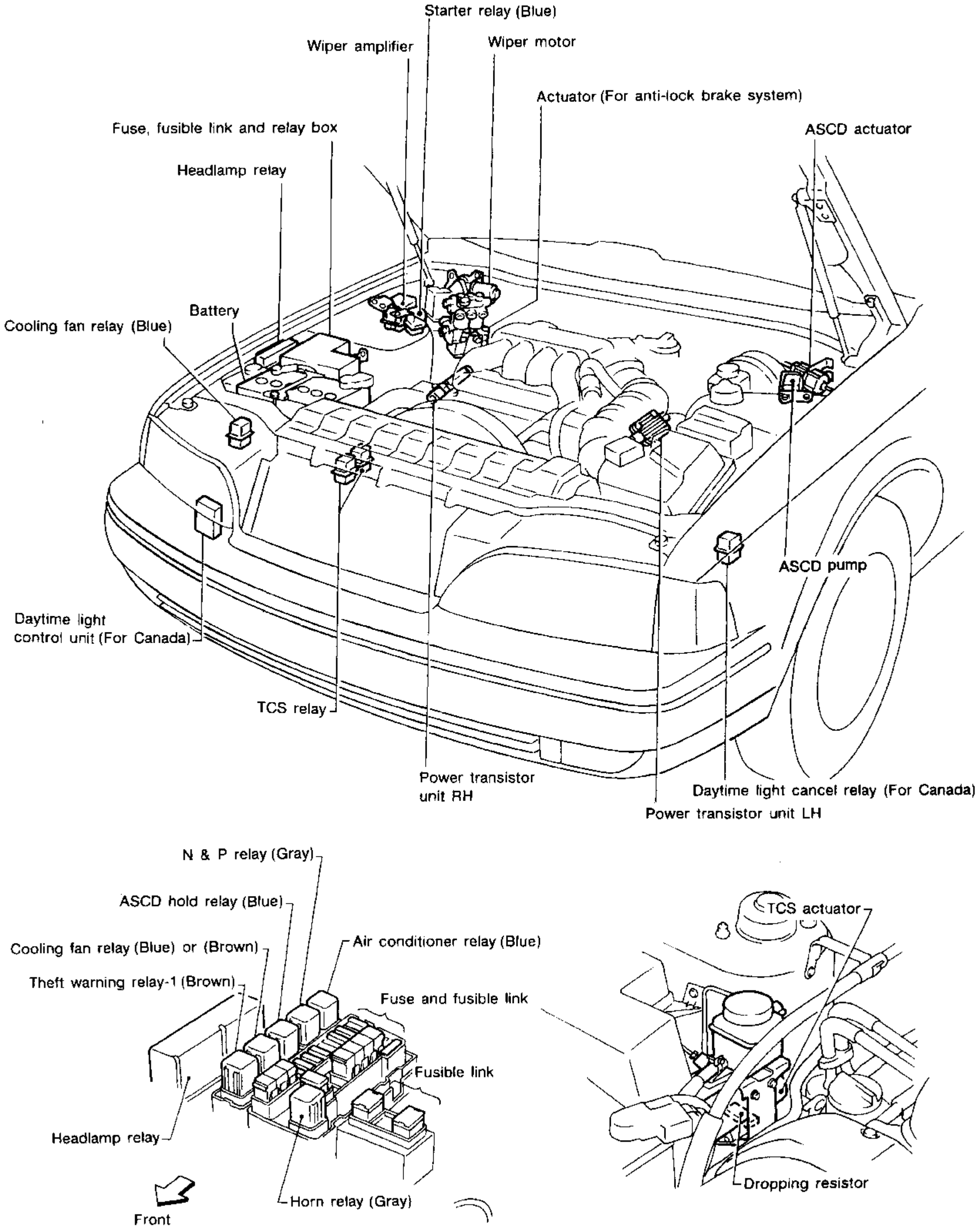


SEL517S

Vehicle speed sensor

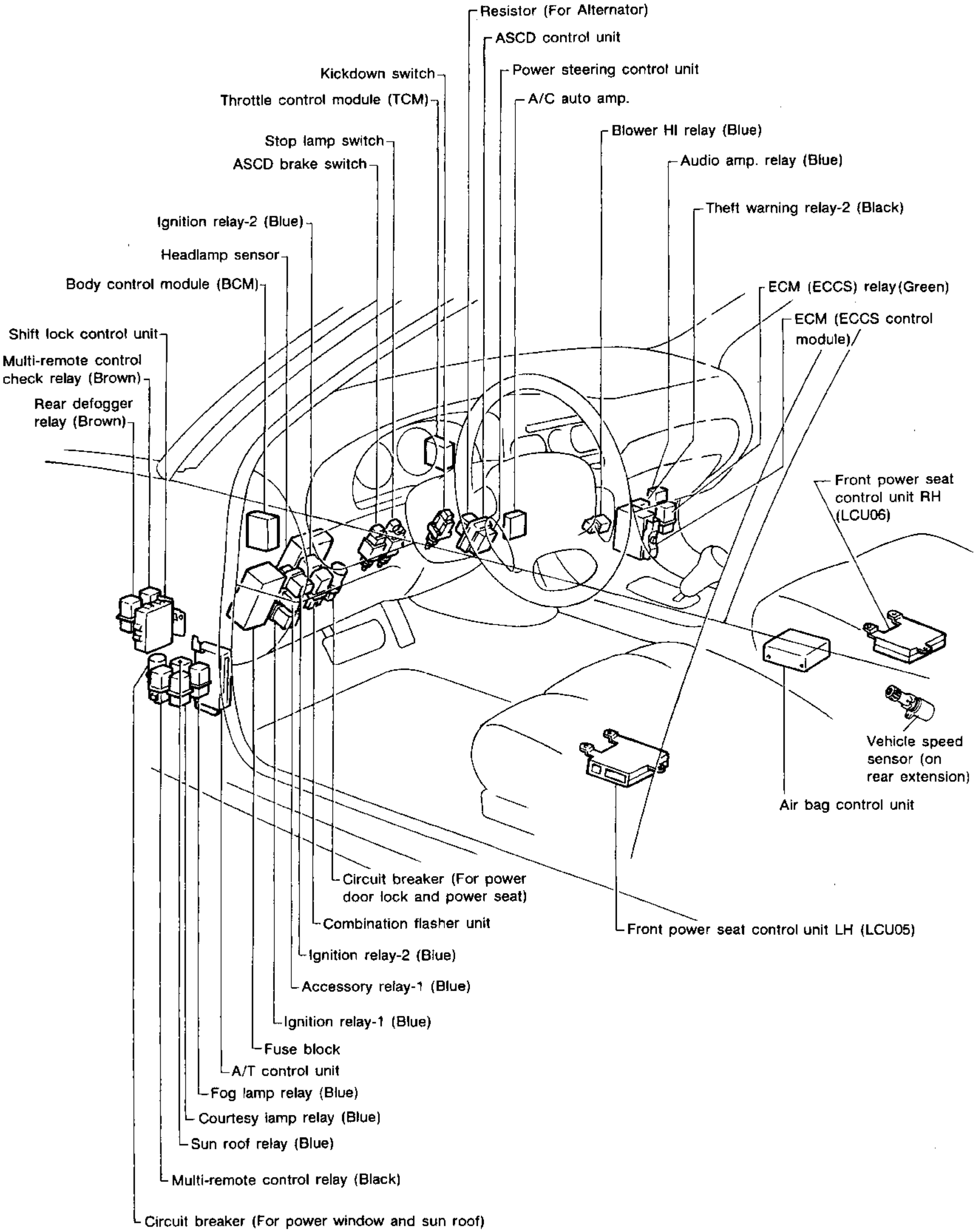
1. Remove vehicle speed sensor from transaxle.
2. Turn speedometer pinion quickly and measure voltage across ⓐ and ⓑ.

Engine Compartment



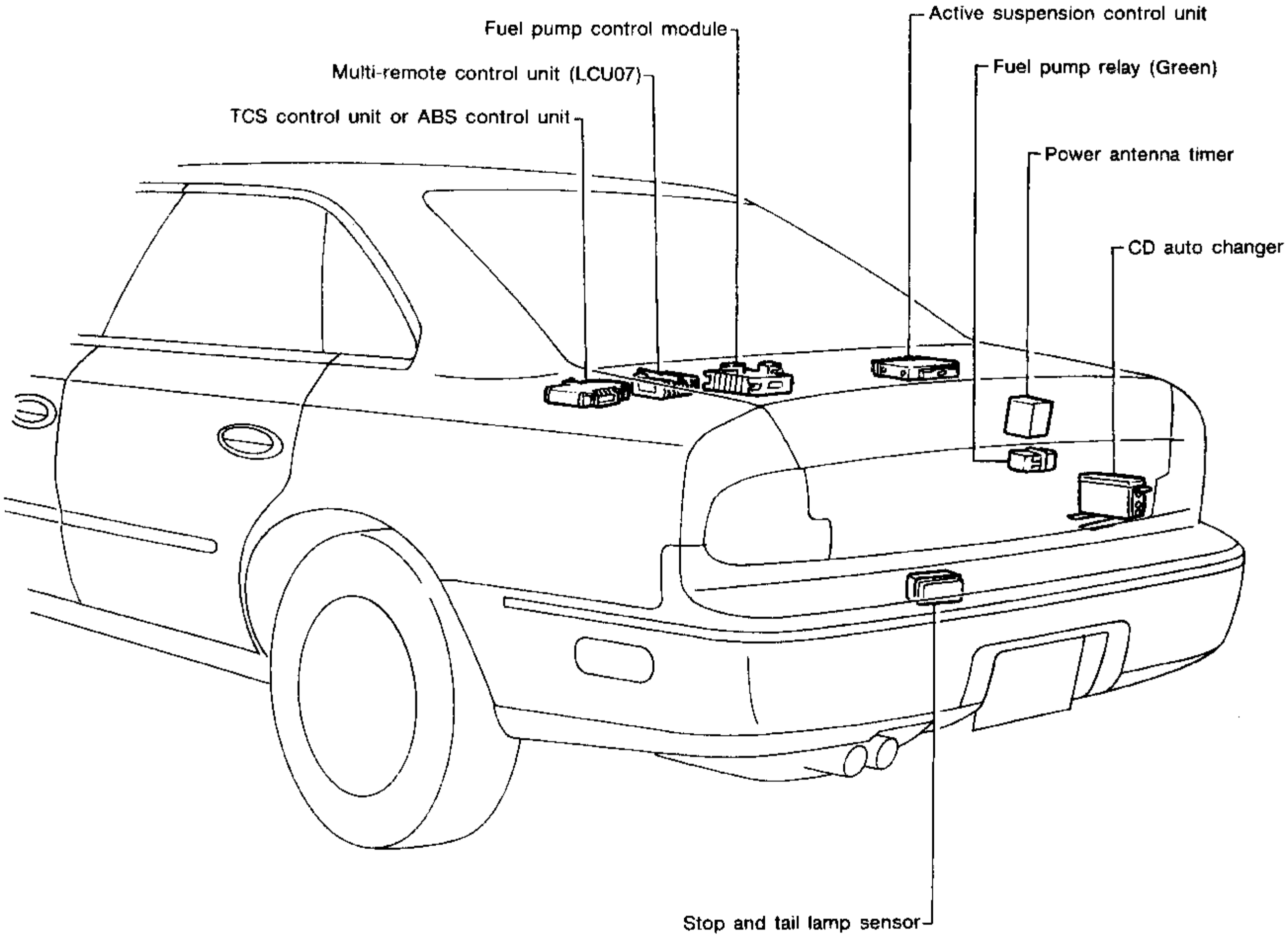
MEL844D

Passenger Compartment



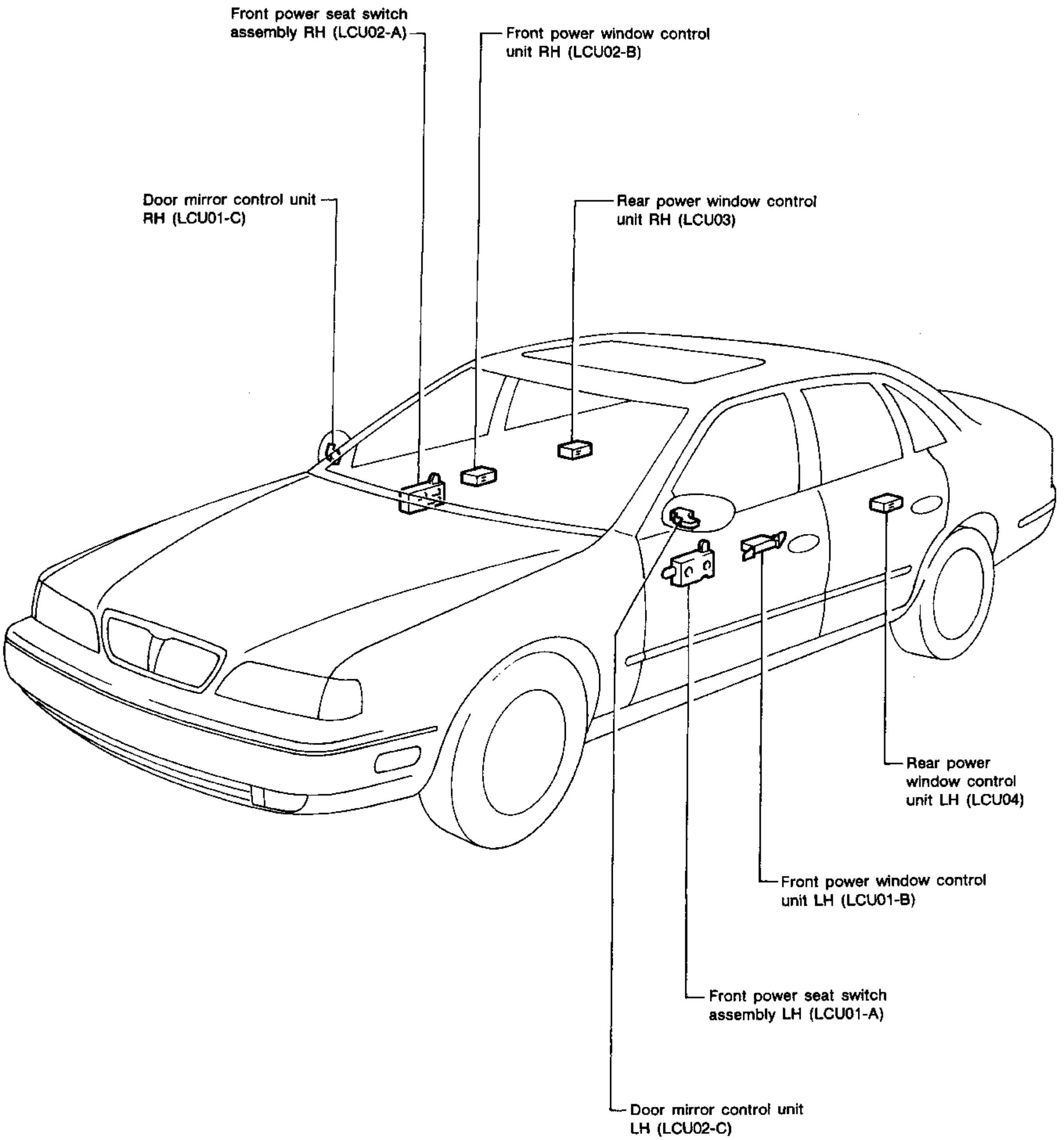
MEL845D

Luggage Compartment



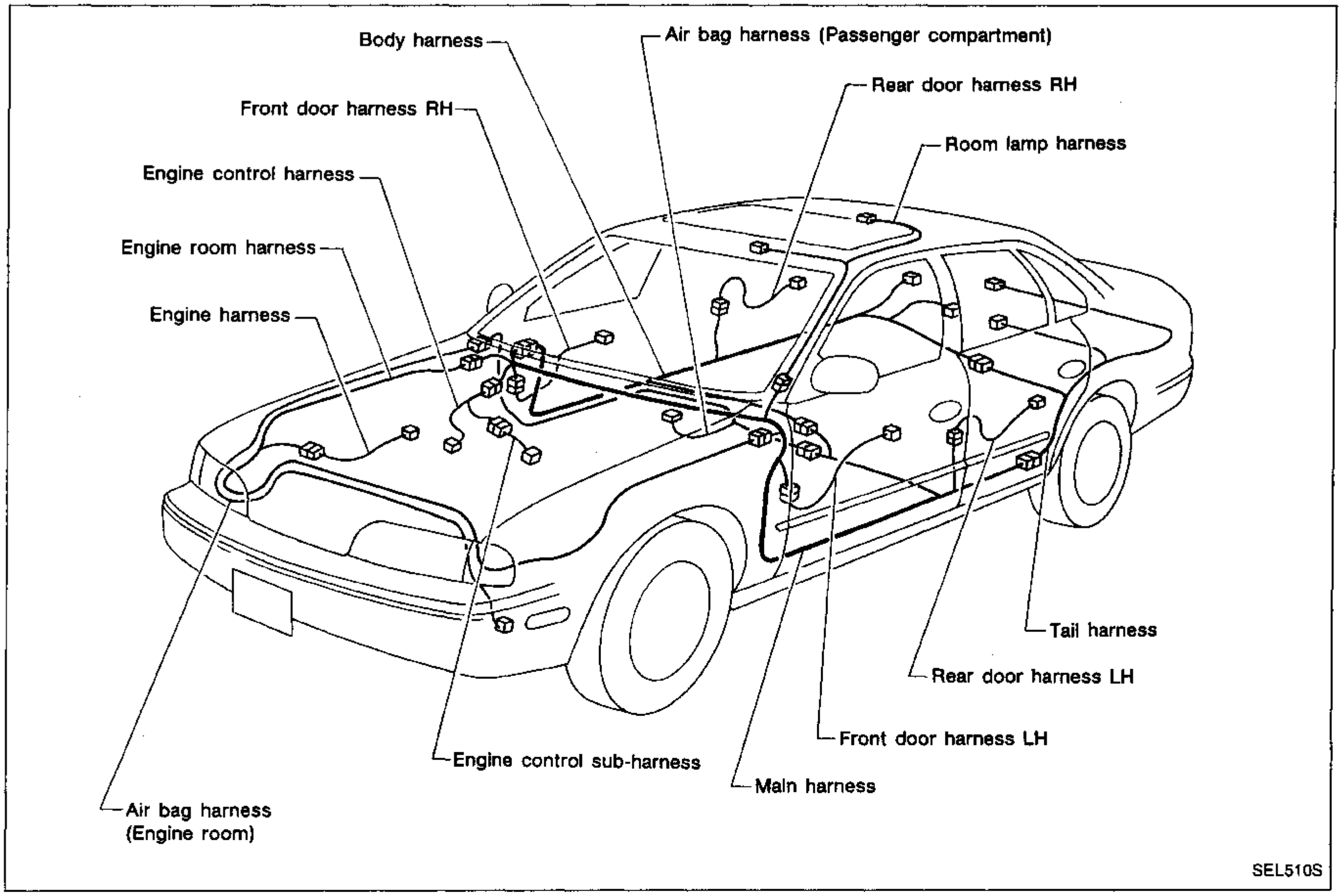
MEL846D

Door



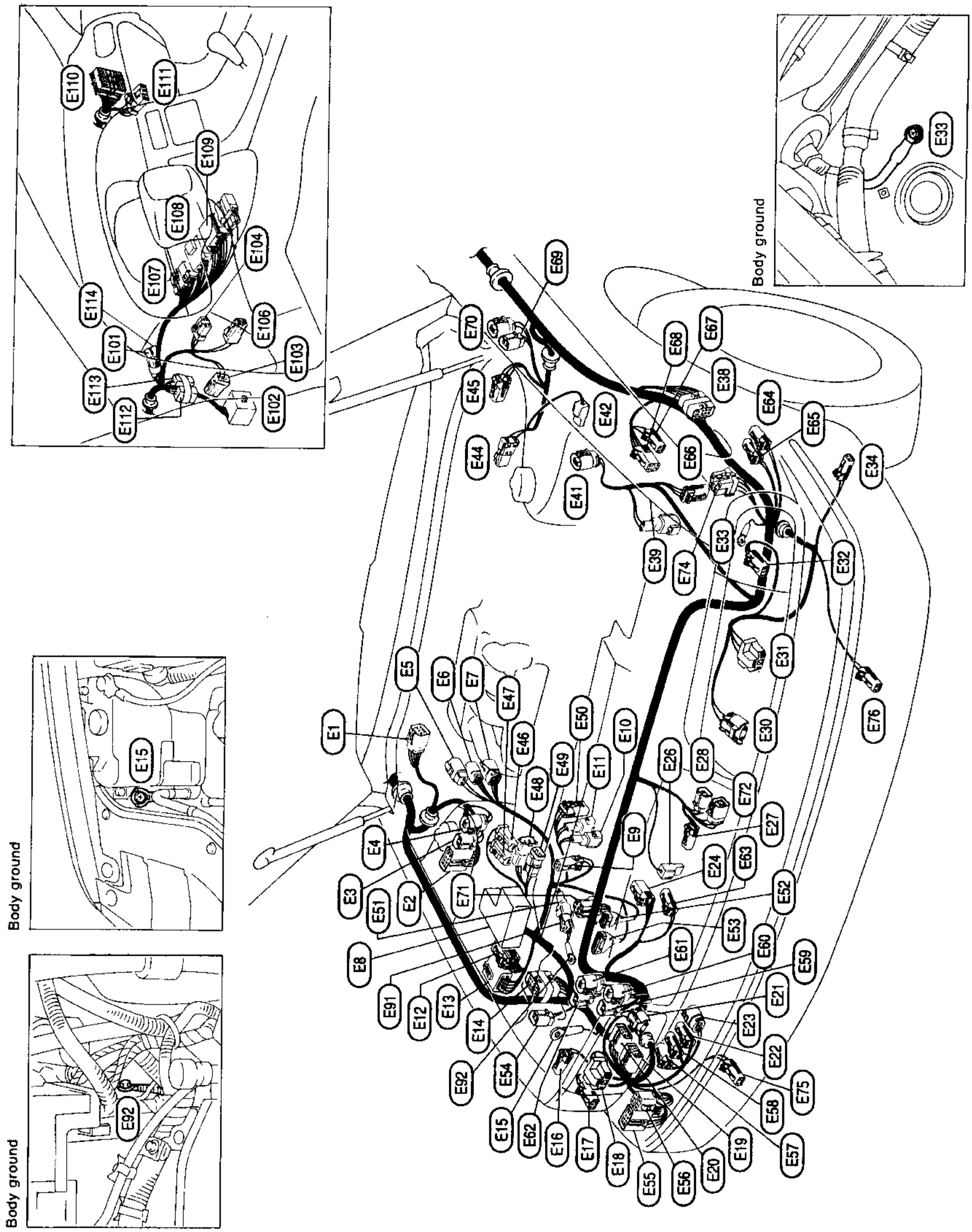
MEL411C

Outline



SEL510S

Engine Room Harness



E1 : Wiper motor
E2 : Wiper amplifier
E3 : Starter relay
E4 : Starter relay
E5 : Actuator (Anti-lock brake system)
E6 : Actuator (Anti-lock brake system)
E7 : Actuator (Anti-lock brake system)
E8 : Relay, fusible link and fuse box
(Refer to "LOCATION OF ELECTRICAL UNITS".)
E9 : Dropping resistor
E10 : Brake pad sensor (Brown)
E11 : Front sensor RH (Anti-lock brake system) (Gray)
E12 : Headlamp relay unit
E13 : Headlamp relay unit
E14 : Joint connector-1
E15 : Body ground
E16 : Front side marker lamp RH
E17 : Front combination lamp RH
E18 : Headlamp RH (DIM.) (Brown)
E19 : Joint connector-2
E20 : Joint connector-3
E21 : Headlamp RH (MAIN) (Black)
E22 : Washer sensor
E23 : Washer motor
E24 : Triple-pressure switch
E26 : Horn
E27 : Ambient sensor (A/C)
E28 : Cooling fan motor (For Canada)
E30 : Headlamp LH (MAIN) (Black)
E31 : Headlamp LH (DIM.) (Brown)
E32 : Front combination lamp LH
E33 : Body ground
E34 : Front side marker lamp LH
E38 : Joint connector-4
E39 : Front sensor LH (Anti-lock brake system)

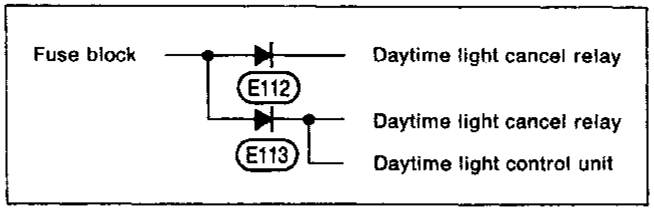
E41 : Hood switch (Theft warning system)
E42 : Horn
E44 : Brake fluid level switch
E45 : ASCD pump
E46 : Battery
E47 : Battery
E48 : To N3
E49 : To N2
E50 : Front RH vehicle height sensor
(Models with active suspension)
E51 : To E91 (Models with TCS)
E52 : TCS actuator
E53 : TCS actuator
E54 : Loading pump for TCS
E55 : Daytime light control unit (For Canada)
E56 : Daytime light control unit (For Canada)
E57 : } Front pressure control unit
E58 : } (Models with active suspension)
E59 : } TCM relay (Models with TCS)
E60 : }
E61 : } TCS relay (Models with TCS)
E62 : }
E63 : Oil pressure switch
(Models with active suspension)
E64 : Oil temperature sensor
(Models with active suspension)
E65 : Oil level switch
(Models with active suspension)
E66 : Front LH vehicle height sensor
(Models with active suspension)
E67 : Oil cooler fan motor
(Models with active suspension)

E68 : Multi-valve unit
(Models with active suspension)
E69 : } Oil cooler fan relay
E70 : } (Models with active suspension)
E71 : Cooling fan relay (Blue) (For U.S.A.)
E72 : Cooling fan motor (For U.S.A.)
E74 : Daytime light cancel relay (For Canada)
E75 : Front fog lamp RH
E76 : Front fog lamp LH
E91 : To E51 (Models with TCS)
E92 : Body ground (Models with TCS)

Passenger compartment

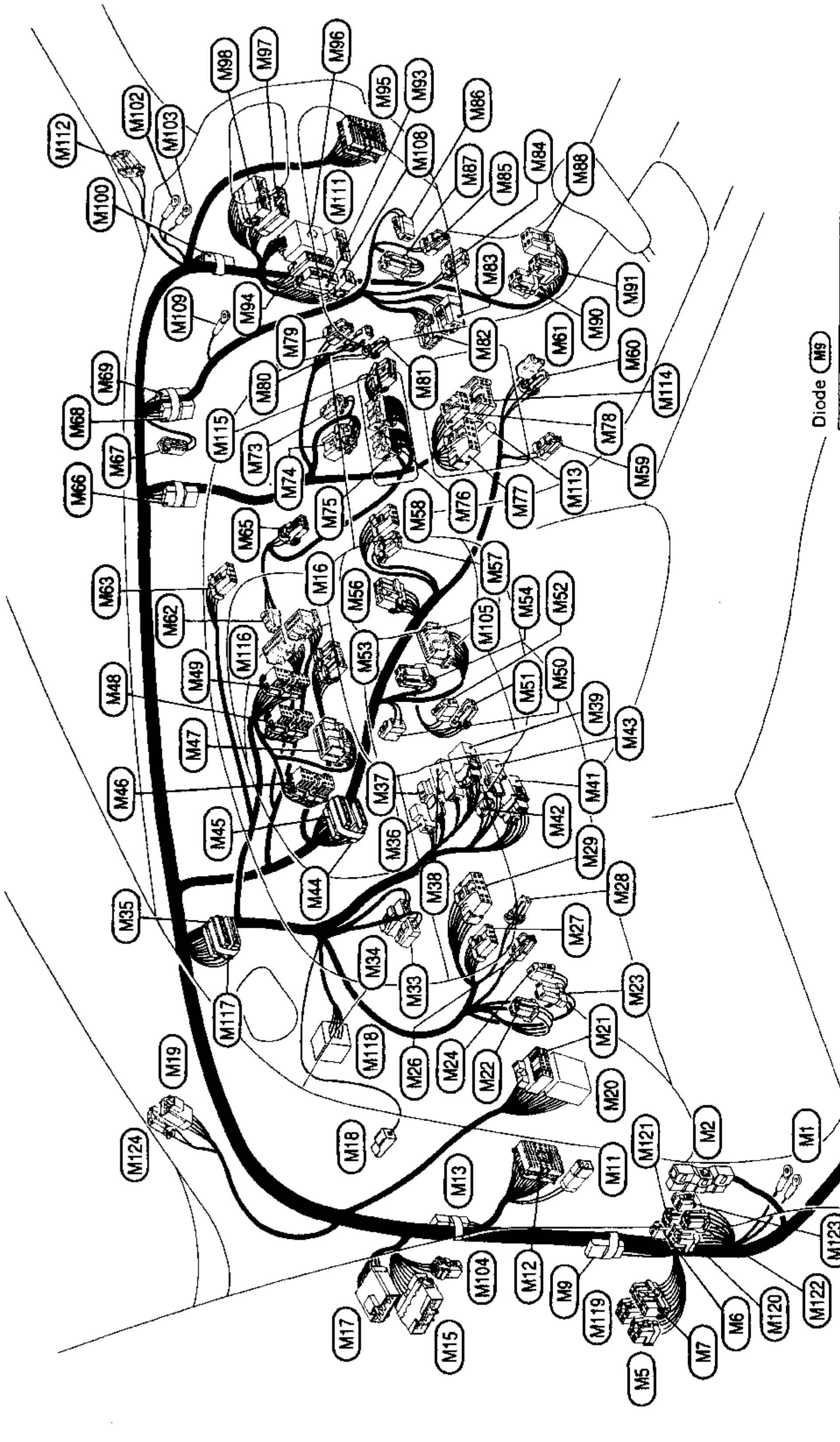
E101 : Joint connector-5 (Green)
E102 : To M12
E103 : To M11
E104 : Fuse block
E106 : Fuse block
E107 : Headlamp sensor
E108 : Ignition switch
E109 : Combination switch
E110 : To M98
E111 : To B26 (Models with active suspension)
E112 : Diode (For Canada)
E113 : Diode (For Canada)
E114 : Joint connector-6 (Orange)

Diode E112 E113

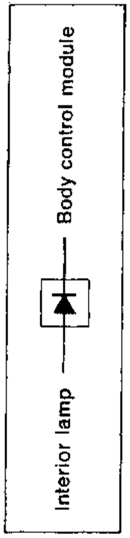


MEL831D

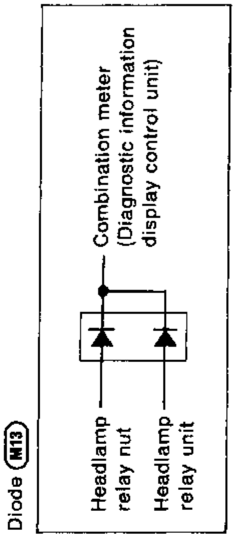
Main Harness



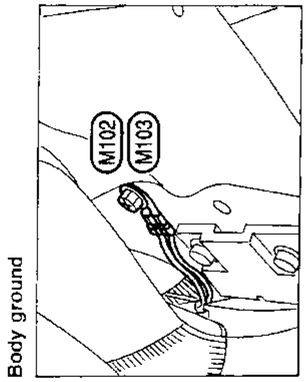
Diode M9



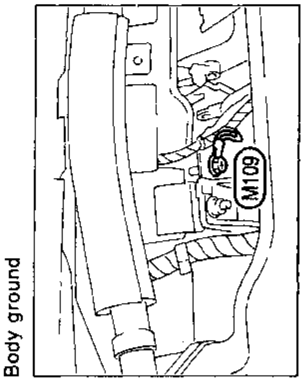
Diode M13



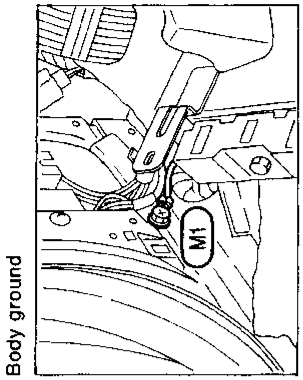
Body ground



Body ground



Body ground



HARNESS LAYOUT

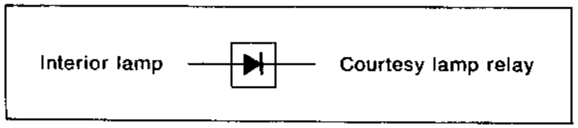
Main Harness (Cont'd)

M1 : Body ground
M2 : A/T control unit
M5 : Rear window defogger relay (Brown)
M6 : Circuit breaker
M7 : Shift lock control unit
M9 : Diode
M11 : To E103
M12 : To E102
M13 : Diode
M15 : To D3
M16 : Throttle control module
M17 : To D1
M18 Parking brake switch
M19 : To R1
M20 : Fuse block
M21 : Data link connector for CONSULT
M22 : Ignition relay-3
M23 : Combination flasher unit
M24 : Circuit breaker
M26 : Foot lamp-LH
M27 : ASCD switch
M28 : Telephone microphone
M29 : Door mirror switch
M33 : Stop lamp switch
M34 : ASCD brake switch
M35 : Joint connector-6 (Blue)
M36 : Telescopic motor
M37 : Telescopic sensor
M38 : Key switch
M39 : Auto drive positioner steering switch
M41 : Wiper switch
M42 : Key lock solenoid
M43 : Key illumination
M44 : Joint connector-3 (Black)
M45 : Joint connector-4 (Orange)
M46 : Combination meter (White)
M47 : Diagnostic information display control unit
M48 : Combination meter (Black)
M49 : Combination meter (White)
M50 : Mode door motor
M51 : Tilt sensor
M52 : Tilt motor
M53 : Kickdown switch
M54 : Alternator "L" resistor
M56 : Power steering control unit

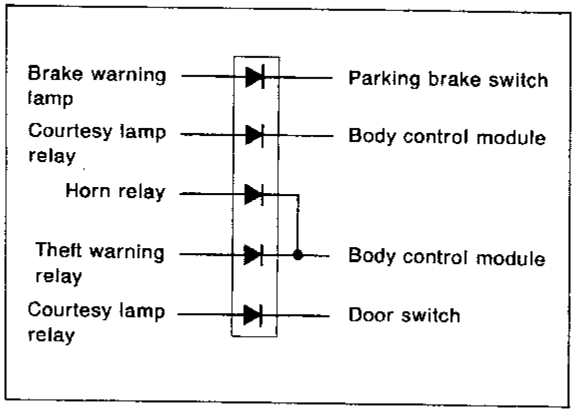
M57 : In-vehicle sensor (A/C)
M58 : Rear window defogger switch
M59 : Ashtray illumination
M60 : Cigarette lighter illumination
M61 : Cigarette lighter
M62 : Illumination control switch
M63 : Hazard switch
M65 : Clock
M66 : Diode
M67 : Sunload sensor (A/C)
M68 : Joint connector-1 (Black)
M69 : Joint connector-2 (Gray)
M73 : Water temperature sensor (A/C)
M74 : Air mix door motor (A/C)
M75 : Auto amp. (A/C)
M76 : Auto amp. (A/C)
M77 : Radio
M78 : Radio
M79 : Trunk lid opener cancel switch
M80 : Glove box lamp switch
M81 : Glove box lamp
M82 : Intake door motor
M83 : Fan control amp.
M84 : Intake sensor (A/C)
M85 : Foot lamp-RH
M86 : Blower motor (A/C)
M87 : Blower HI relay (A/C)
M88 : Audio amp. relay
M90 : ECM (ECCS) relay
M91 : Theft warning relay-2
M93 : To C51 (White)
M94 : To C52 (Blue)
M95 : To B2
M96 : To E110
M97 : To D53

M98 : To D52
M100 : Diode
M102 : Body ground
M103 : Body ground
M104 : Front vertical G sensor (Models with active suspension)
M105 : ASCD control unit (Models with TCS)
M108 : To C57 (Models with TCS)
M109 : Body ground (Models with TCS and active suspension)
M111 : To C58
M112 : Tweeter RH
M113 : Radio
M114 : Radio
M115 : A/C control unit
M116 : Throttle control module
M117 : Joint connector-5 (Orange)
M118 : Body control module (BCM)
M119 : Multi-remote control check relay (Brown)
M120 : Multi-remote control relay (Black)
M121 : Sun roof relay (Blue)
M122 : Courtesy lamp relay (Blue)
M123 : Fog lamp relay (Blue)
M124 : To R6

Diode M66



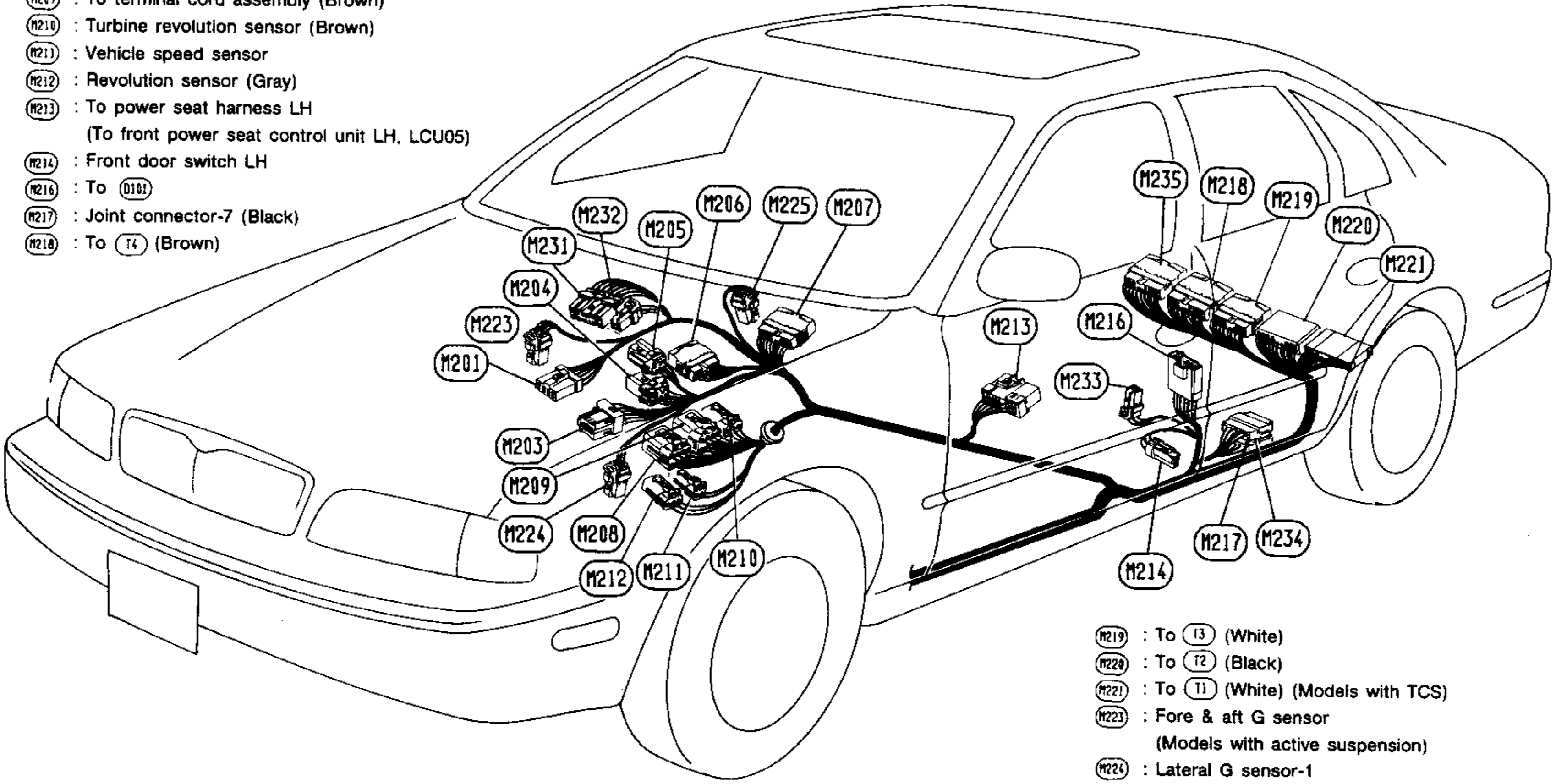
Diode M100



MEL832D

Main Harness (Cont'd)

M201 : Power window main switch (Center console)
M203 : Power window main switch (Center console)
M204 : Shift lock solenoid & detention switch
M205 : 1st position switch
M206 : To A11
M207 : Handset & speaker (For telephone)
M208 : Inhibitor switch (Gray)
M209 : To terminal cord assembly (Brown)
M210 : Turbine revolution sensor (Brown)
M211 : Vehicle speed sensor
M212 : Revolution sensor (Gray)
M213 : To power seat harness LH
(To front power seat control unit LH, LCU05)
M214 : Front door switch LH
M216 : To D101
M217 : Joint connector-7 (Black)
M218 : To T4 (Brown)



M219 : To T3 (White)
M220 : To T2 (Black)
M221 : To T1 (White) (Models with TCS)
M223 : Fore & aft G sensor
(Models with active suspension)
M224 : Lateral G sensor-1
(Models with active suspension)
M225 : Lateral G sensor-2
(Models with active suspension)
M231 : Seat heater switch LH
M232 : TCS switch
M233 : ELR solenoid LH
M234 : Joint connector-8 (Green)
M235 : To T42 (Black)

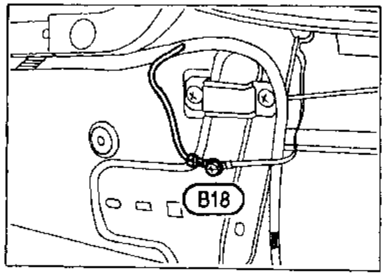
MEL370C

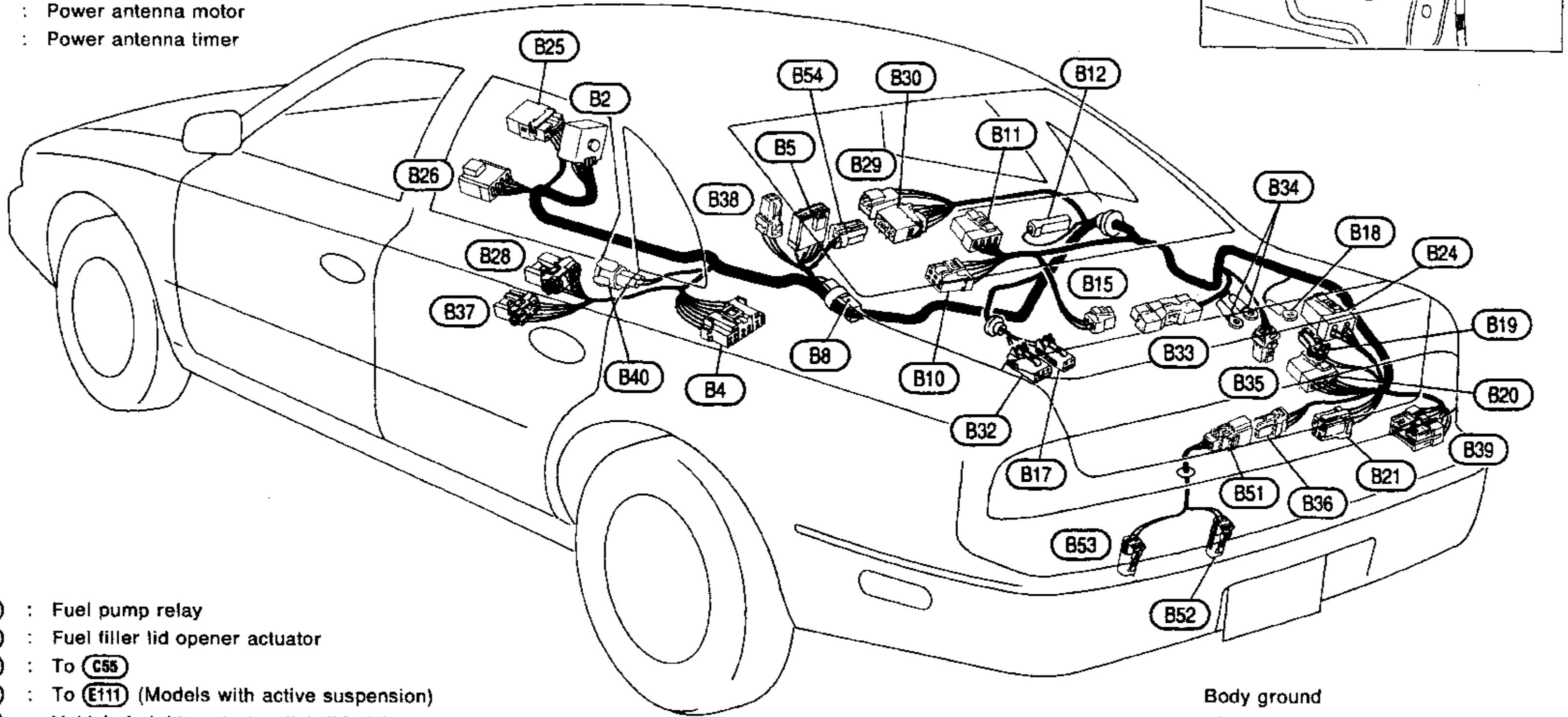
Body Harness

B2 : To M95
B4 : To power seat harness RH (To front power seat control unit RH, LCU06)
B5 : To D151
B8 : Joint connector (Orange)
B10 : Fuel tank gauge unit
B11 : Fuel pump control module
B12 : Rear door switch RH
B15 : Rear speaker RH
B17 : Rear brake pad sensor
B18 : Body ground
B19 : Power antenna motor
B20 : Power antenna timer

B38 : ELR solenoid RH
B39 : CD auto changer
B40 : To A12
B51 : To B36
B52 : Rear pressure control unit
B53 : Rear pressure control unit
B54 : Front door switch RH

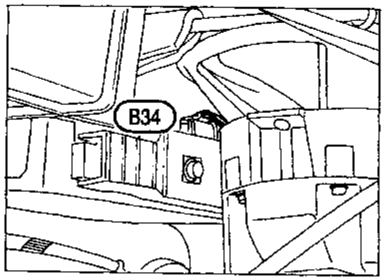
Body ground





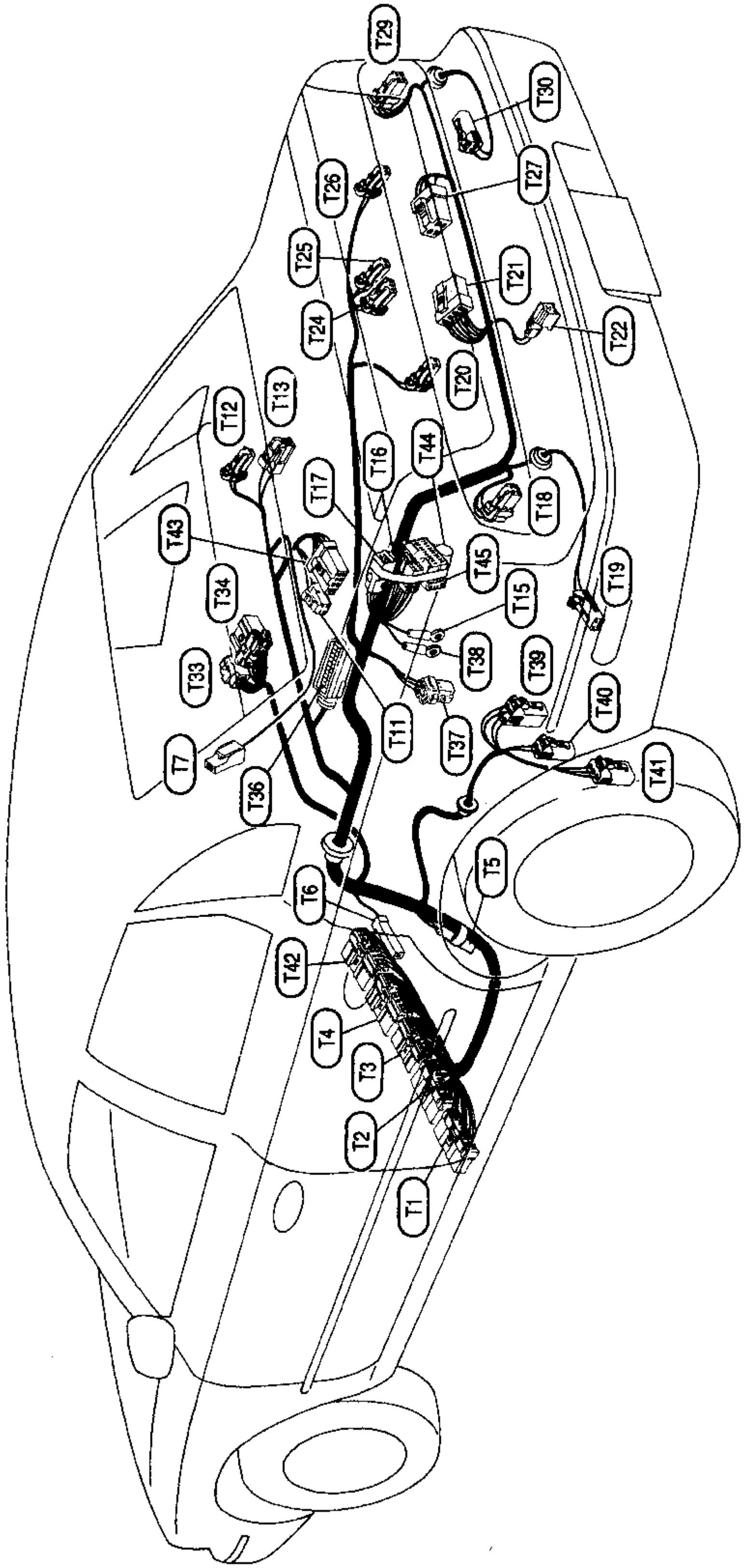
B21 : Fuel pump relay
B24 : Fuel filler lid opener actuator
B25 : To C55
B26 : To E111 (Models with active suspension)
B28 : Vehicle height control switch (Models with active suspension)
B29 : To T33
B30 : To T34 (Models with active suspension)
B32 : Rear RH vehicle height sensor (Models with active suspension)
B33 : Active suspension control unit
B34 : Body ground (Models with active suspension)
B35 : Rear RH vertical G sensor (Models with active suspension)
B36 : To B51 (Models with active suspension)
B37 : Seat heater switch RH

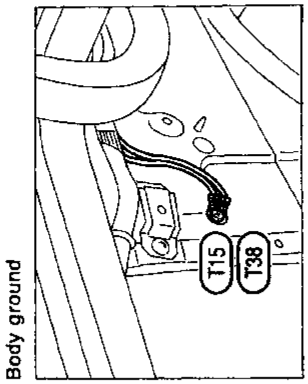
Body ground



MEL833D

Tail Harness





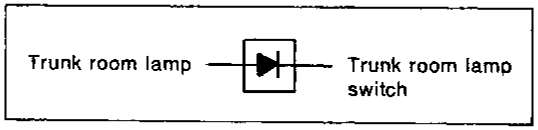
Tail Harness (Cont'd)

T1 : To M221 (White)
T2 : To M220 (Black)
T3 : To M219 (White)
T4 : To M218 (Brown)
T5 : Diode
T6 : Rear door switch LH
T7 : Rear window defogger
T11 : Rear speaker LH
T12 : High-mounted stop lamp
T13 : Trunk room lamp
T15 : Body ground
T16 : Receiver (For telephone)
T17 : Receiver (For telephone)

T18 : Rear combination lamp LH
T19 : Rear side marker lamp LH
T20 : Back-up lamp LH
T21 : Stop and tail lamp sensor
T22 : To license lamp harness
T24 : Trunk room lamp switch
T25 : Trunk lid key cylinder switch
T26 : Back-up lamp RH
T27 : Trunk lid opener actuator
T29 : Rear combination lamp RH
T30 : Rear side marker lamp RH
T33 : To B29
T34 : To B30 (Models with active suspension)

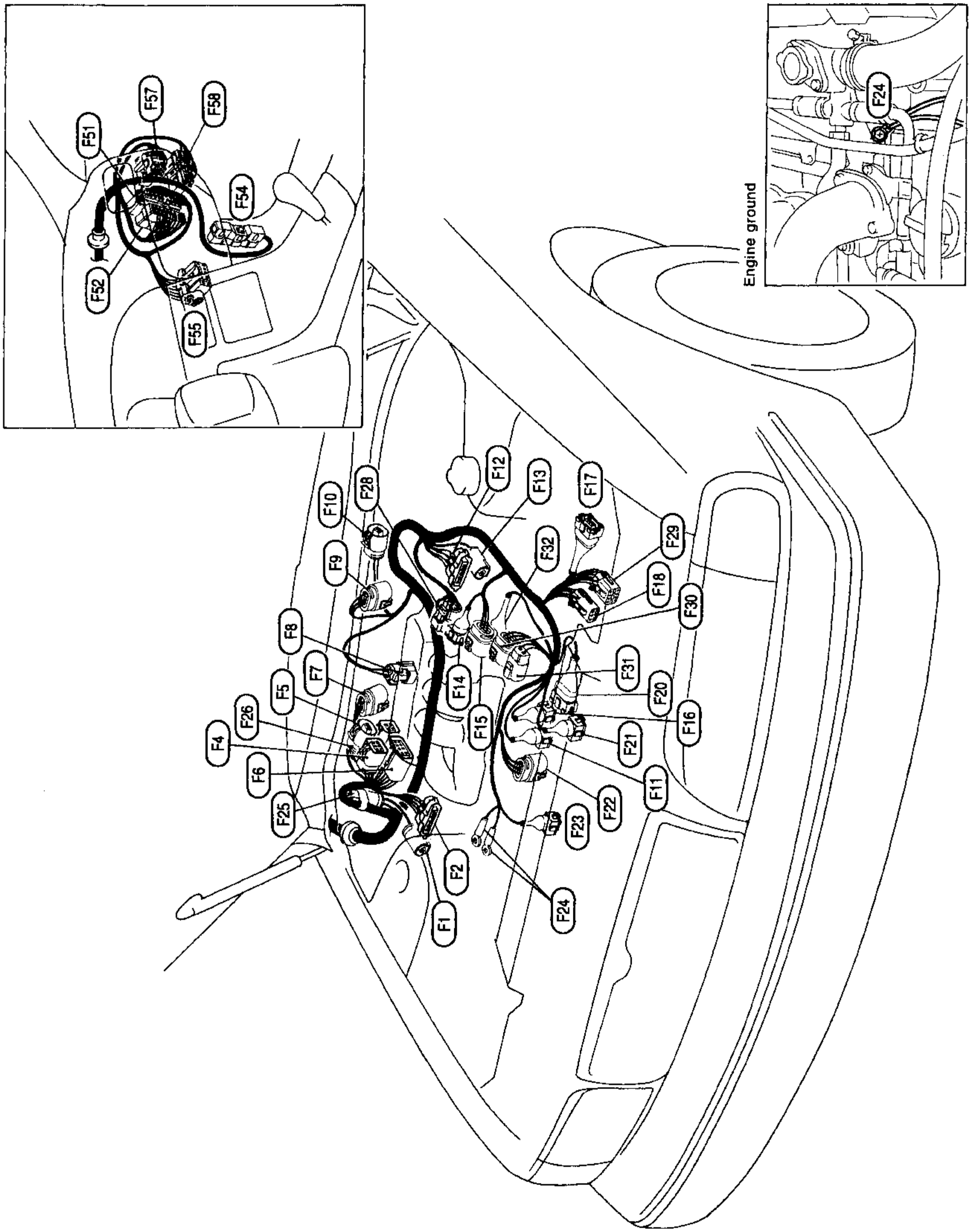
T36 : TCS control unit or ABS control unit
T37 : Rear LH vertical G sensor
(Models with active suspension)
T38 : Body ground
T39 : Rear skid sensor (Models with TCS)
T40 : Rear skid sensor (Models without TCS)
T41 : Rear LH vehicle height sensor
(Models with active suspension)
T42 : To M235 (Black)
T43 : Multi-remote control unit (LCU07)
T44 : Receiver (For telephone)
T45 : Receiver (For telephone)

Diode T5



MEL834D

Engine Control Harness



Engine Control Harness (Cont'd)

F1 : To S8
F2 : Power transistor unit RH
F4 : To S1
F5 : To S51
F6 : To S52
F7 : Heated oxygen sensor RH
F8 : IACV-AAC valve
F9 : Heated oxygen sensor LH
F10 : EGR temperature sensor
F11 : EGRC-solenoid valve
F12 : Power transistor unit LH
F13 : To S69
F14 : Throttle position switch (Models without TCS)
F15 : Throttle position sensor-1
F16 : Canister control solenoid valve

F17 : Mass air flow sensor
F18 : To S31 (Models without active suspension)
F20 : Camshaft position sensor
F21 : VTC solenoid valve LH
F22 : Sub-camshaft position sensor
F23 : VTC solenoid valve RH
F24 : Engine ground
F25 : Check connector
F26 : To S21 (Models with TCS)
F28 : Throttle position sensor-2 (Models with TCS)
F29 : To S32 (Models with active suspension)
F30 : Throttle position sensor-1 (Models with TCS)
F31 : Throttle motor (Models with TCS)
F32 : Throttle position switch (Models with TCS)

Passenger compartment

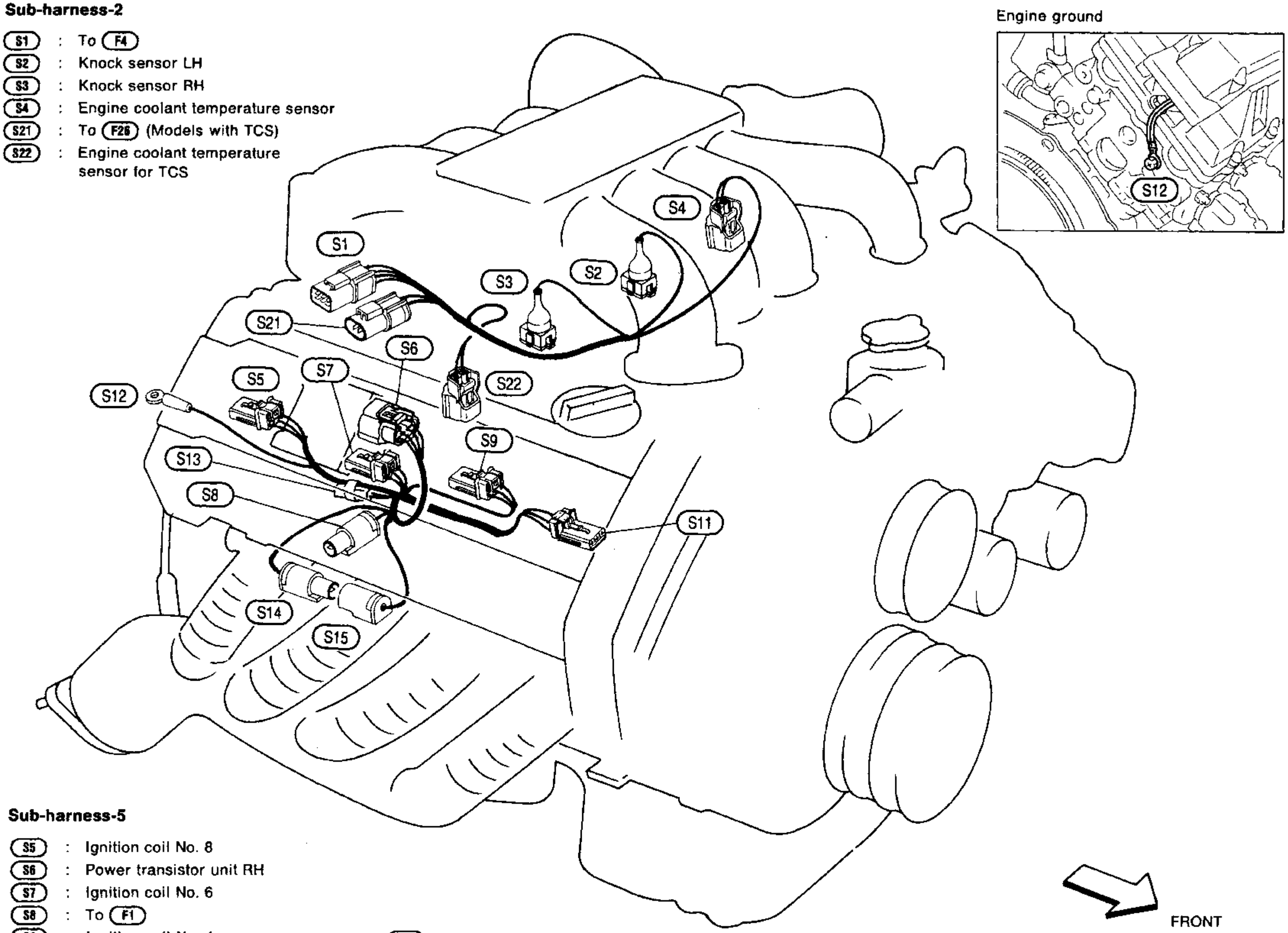
F51 : To M93
F52 : To M94
F54 : ECM (ECCS control module)
F55 : To B25
F57 : To M108 (Models with TCS)
F58 : To M111

MEL835D

Engine Control Sub-harness

Sub-harness-2

S1 : To F4
S2 : Knock sensor LH
S3 : Knock sensor RH
S4 : Engine coolant temperature sensor
S21 : To F26 (Models with TCS)
S22 : Engine coolant temperature sensor for TCS



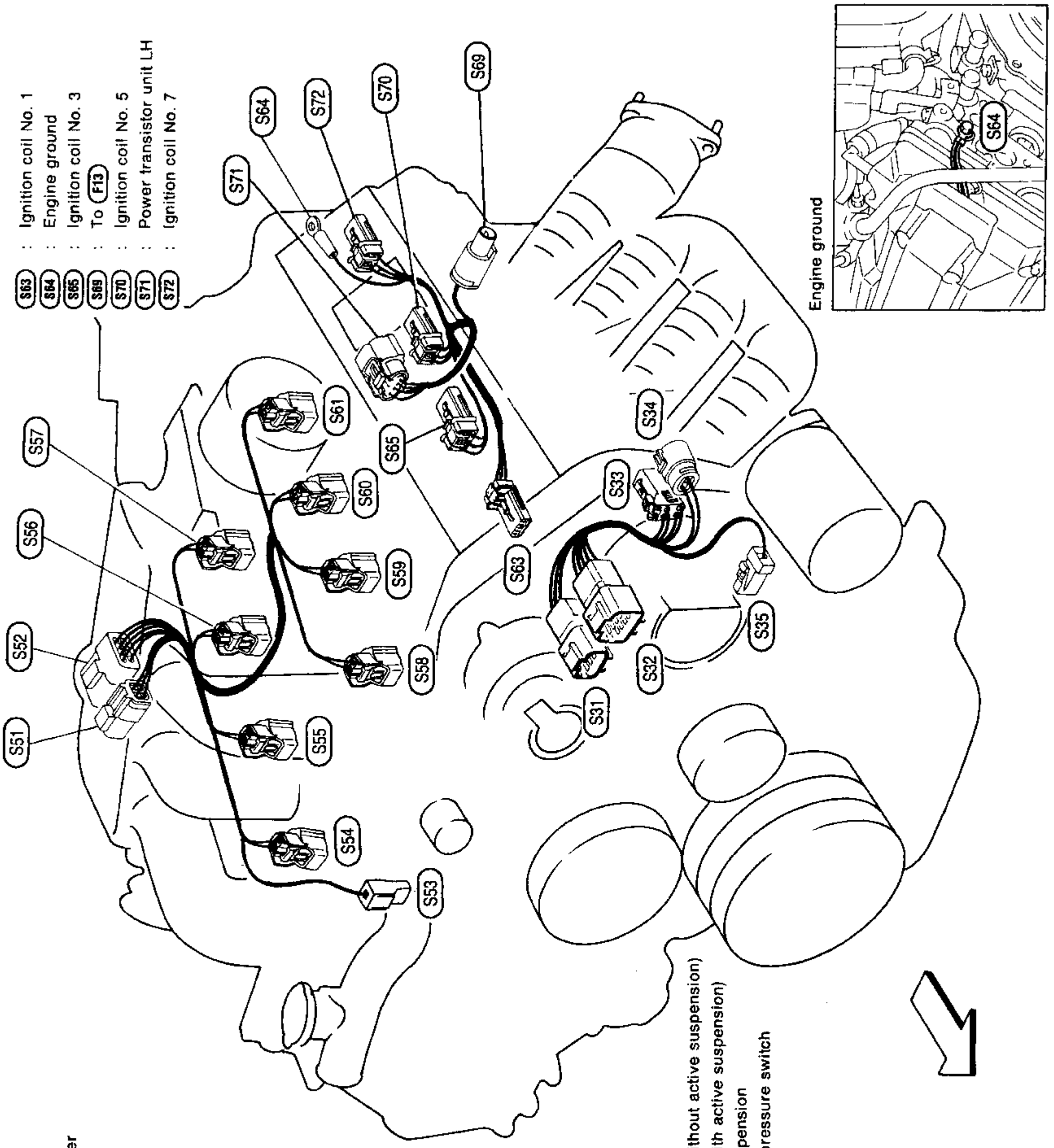
Sub-harness-5

S5 : Ignition coil No. 8
S6 : Power transistor unit RH
S7 : Ignition coil No. 6
S8 : To F1
S9 : Ignition coil No. 4
S11 : Ignition coil No. 2
S12 : Engine ground

S13 : Resistor (Models with TCS)
S14 : Check connector (Models with TCS)
S15 : Check connector (Models with TCS)

MEL836D

Engine Control Sub-harness (Cont'd)



MEL837D

Sub-harness-1

S51 : To F5
S52 : To F6
S53 : Thermal transmitter
S54 : Injector No. 2
S55 : Injector No. 4
S56 : Injector No. 6
S57 : Injector No. 8
S58 : Injector No. 1
S59 : Injector No. 3
S60 : Injector No. 5
S61 : Injector No. 7

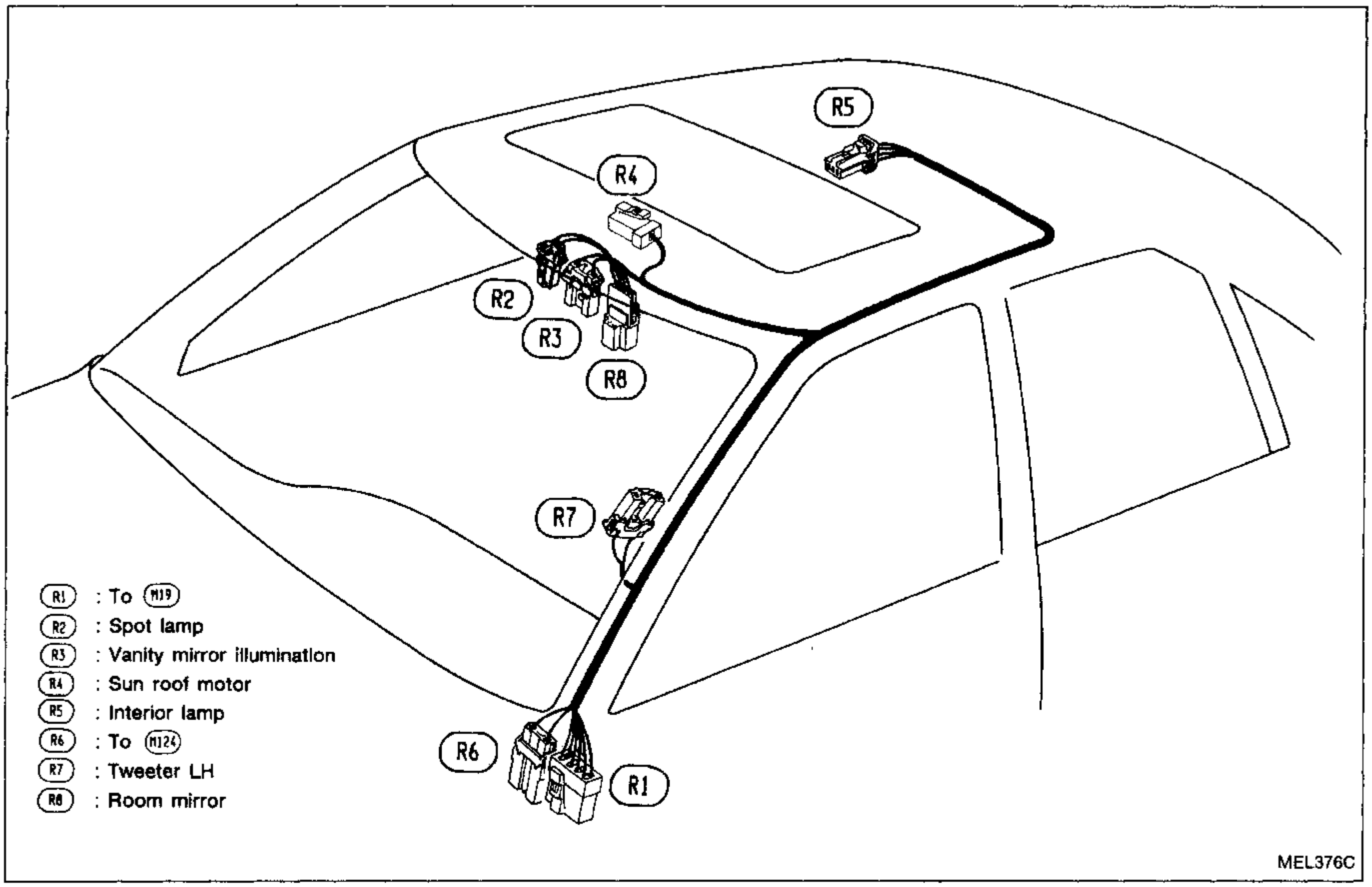
Sub-harness-3

S31 : To F18 (Models without active suspension)
S32 : To F29 (Models with active suspension)
S33 : Pump for active suspension
S34 : Power steering oil pressure switch
S35 : Oil pressure switch

Sub-harness-4

S63 : Ignition coil No. 1
S64 : Engine ground
S65 : Ignition coil No. 3
S69 : To F13
S70 : Ignition coil No. 5
S71 : Power transistor unit LH
S72 : Ignition coil No. 7

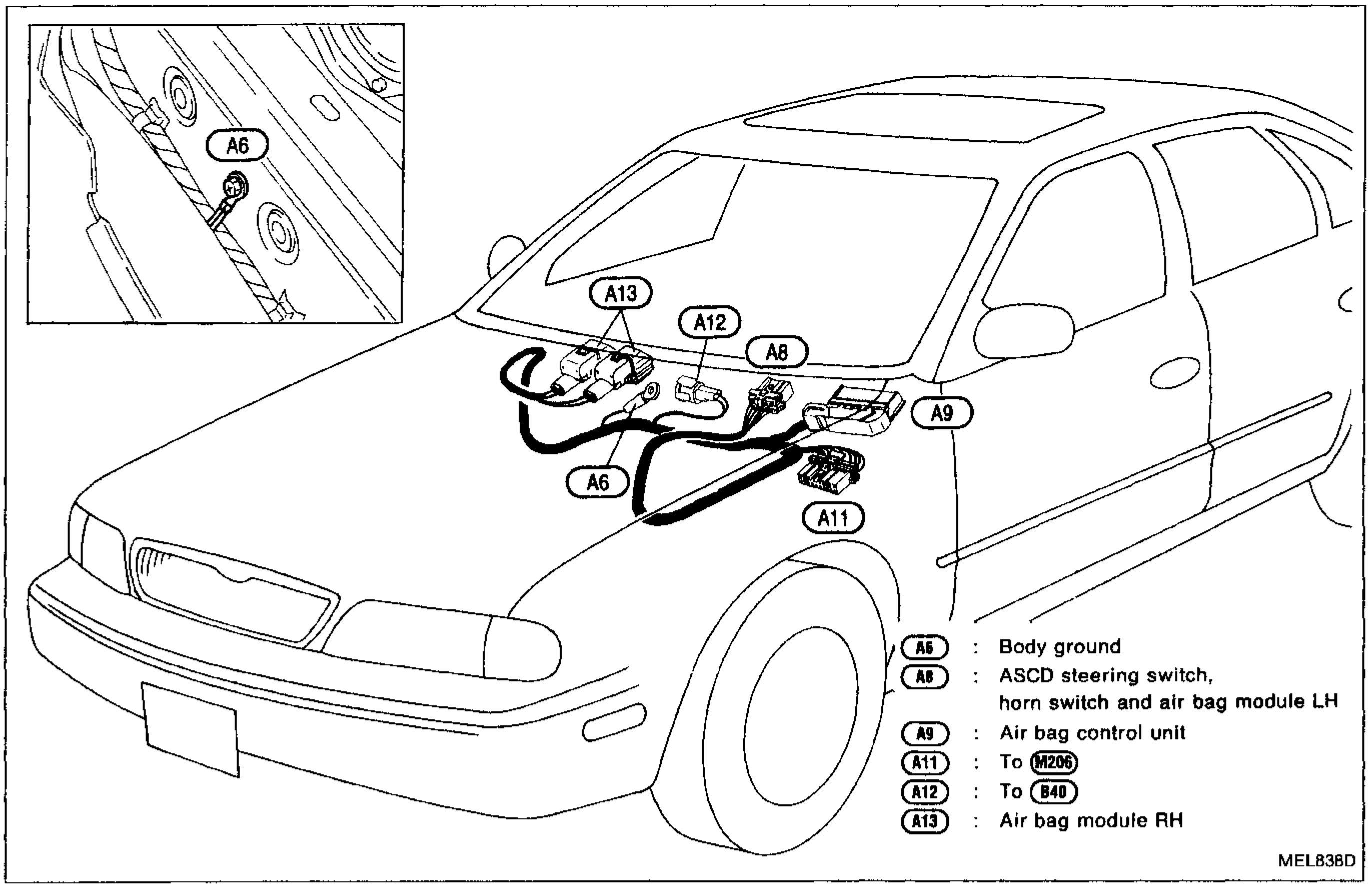
Room Lamp Harness



R1 : To M19
R2 : Spot lamp
R3 : Vanity mirror illumination
R4 : Sun roof motor
R5 : Interior lamp
R6 : To M124
R7 : Tweeter LH
R8 : Room mirror

MEL376C

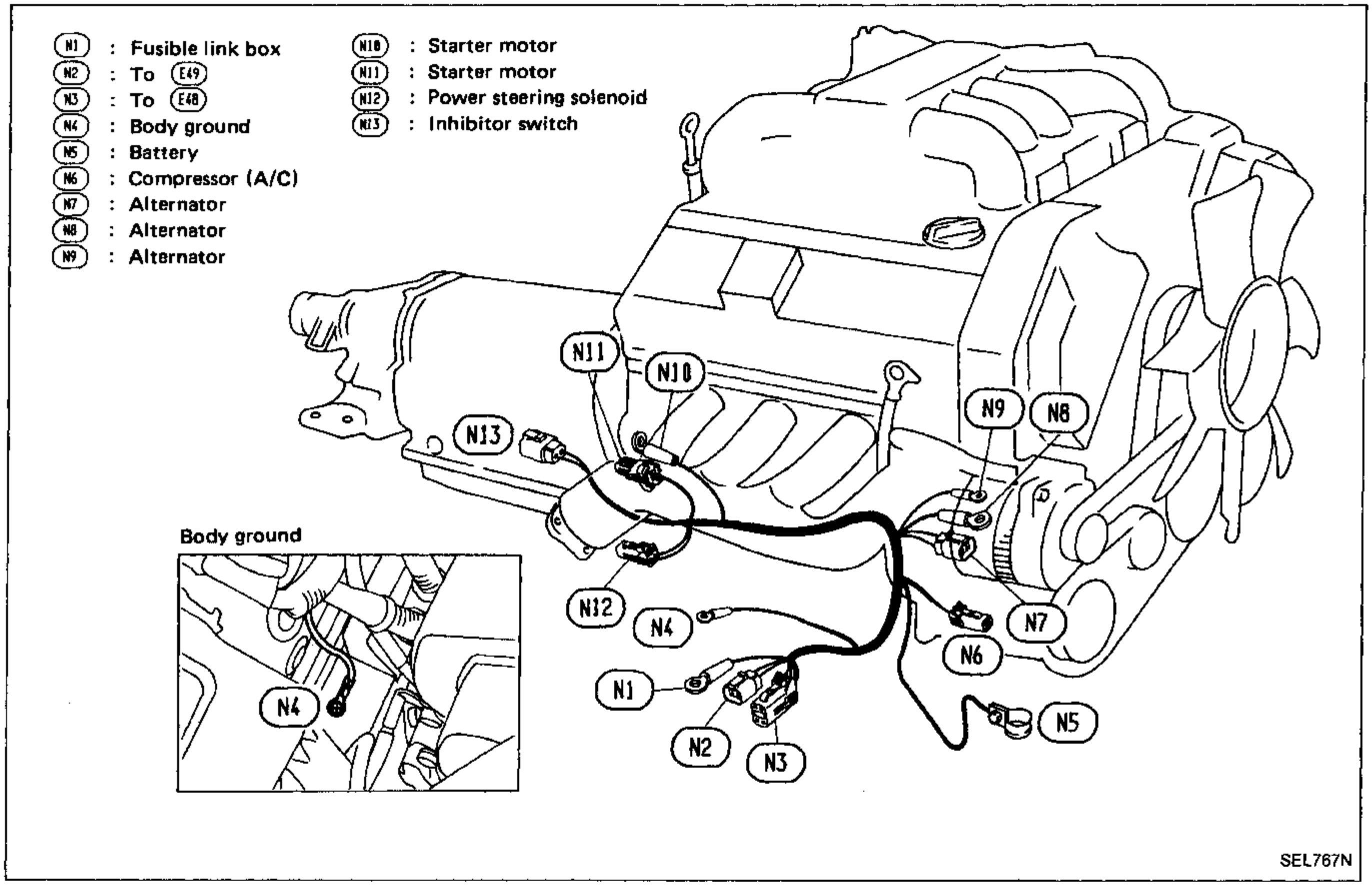
Air Bag Harness



A6 : Body ground
A8 : ASCD steering switch,
horn switch and air bag module LH
A9 : Air bag control unit
A11 : To M206
A12 : To B40
A13 : Air bag module RH

MEL838D

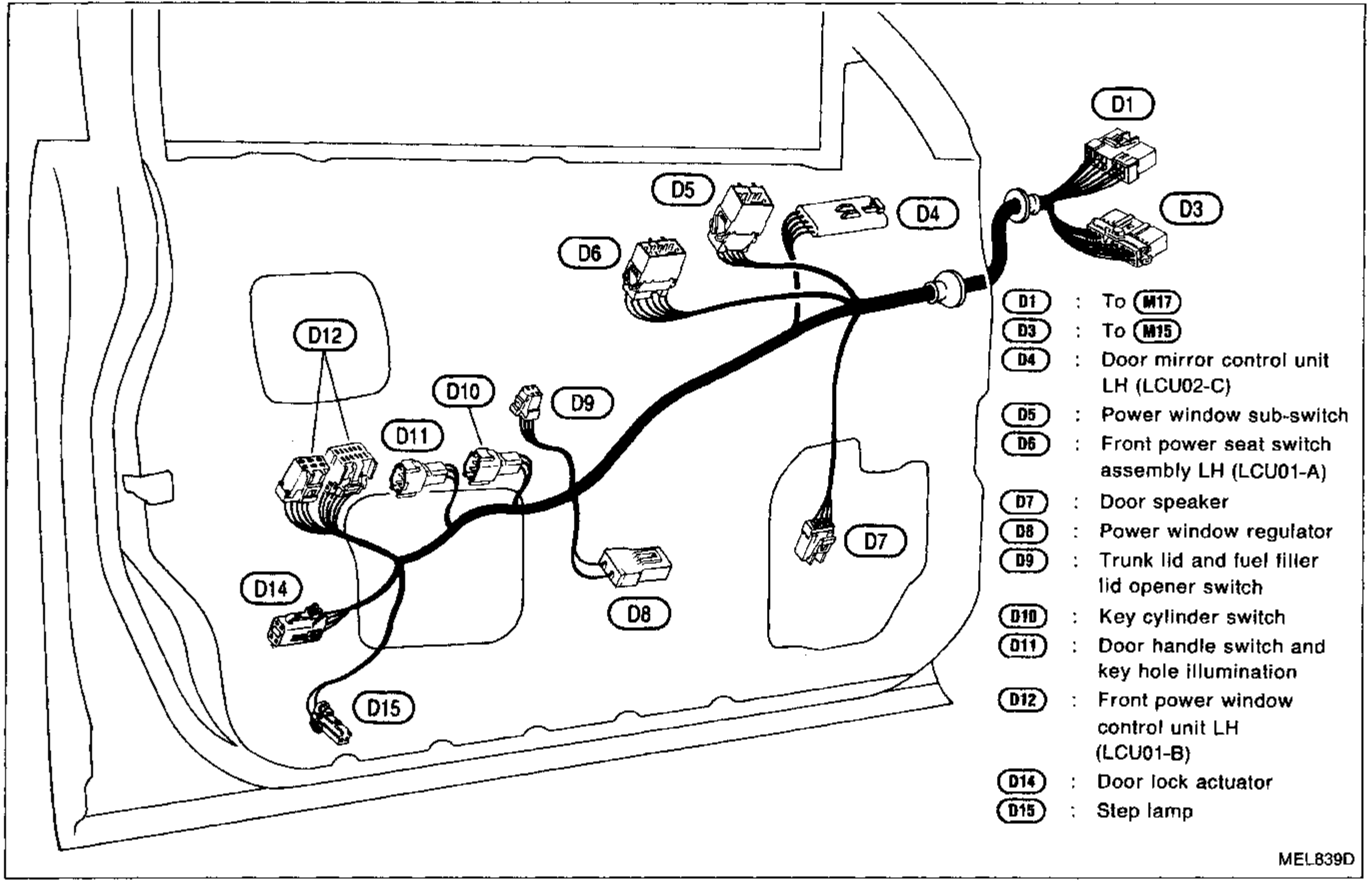
Engine Harness



N1 : Fusible link box
N2 : To E49
N3 : To E48
N4 : Body ground
N5 : Battery
N6 : Compressor (A/C)
N7 : Alternator
N8 : Alternator
N9 : Alternator
N10 : Starter motor
N11 : Starter motor
N12 : Power steering solenoid
N13 : Inhibitor switch

Door Harness (LH side)

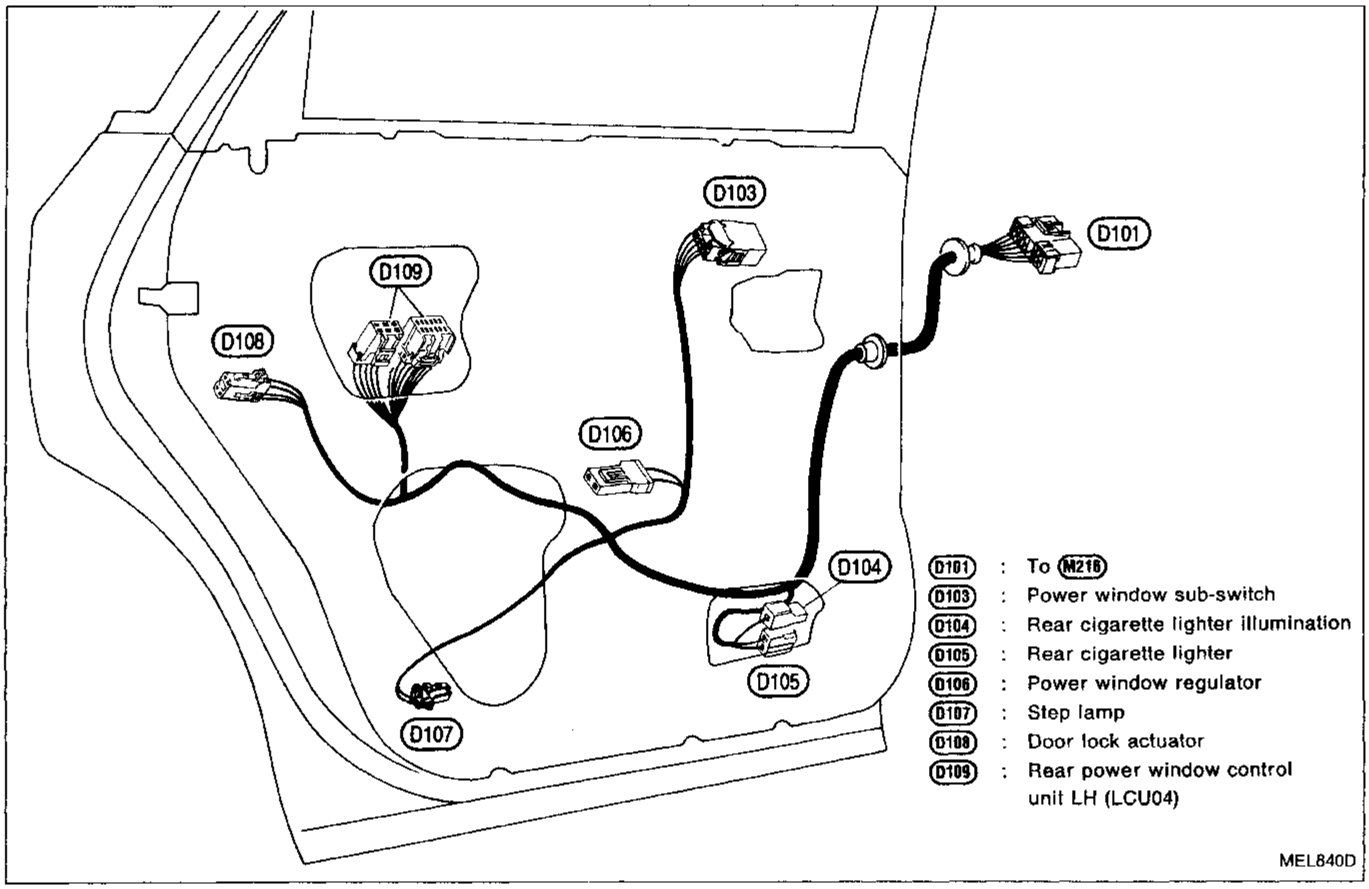
FRONT



D1 : To M17
D3 : To M15
D4 : Door mirror control unit LH (LCU02-C)
D5 : Power window sub-switch
D6 : Front power seat switch assembly LH (LCU01-A)
D7 : Door speaker
D8 : Power window regulator
D9 : Trunk lid and fuel filler lid opener switch
D10 : Key cylinder switch
D11 : Door handle switch and key hole illumination
D12 : Front power window control unit LH (LCU01-B)
D14 : Door lock actuator
D15 : Step lamp

MEL839D

REAR

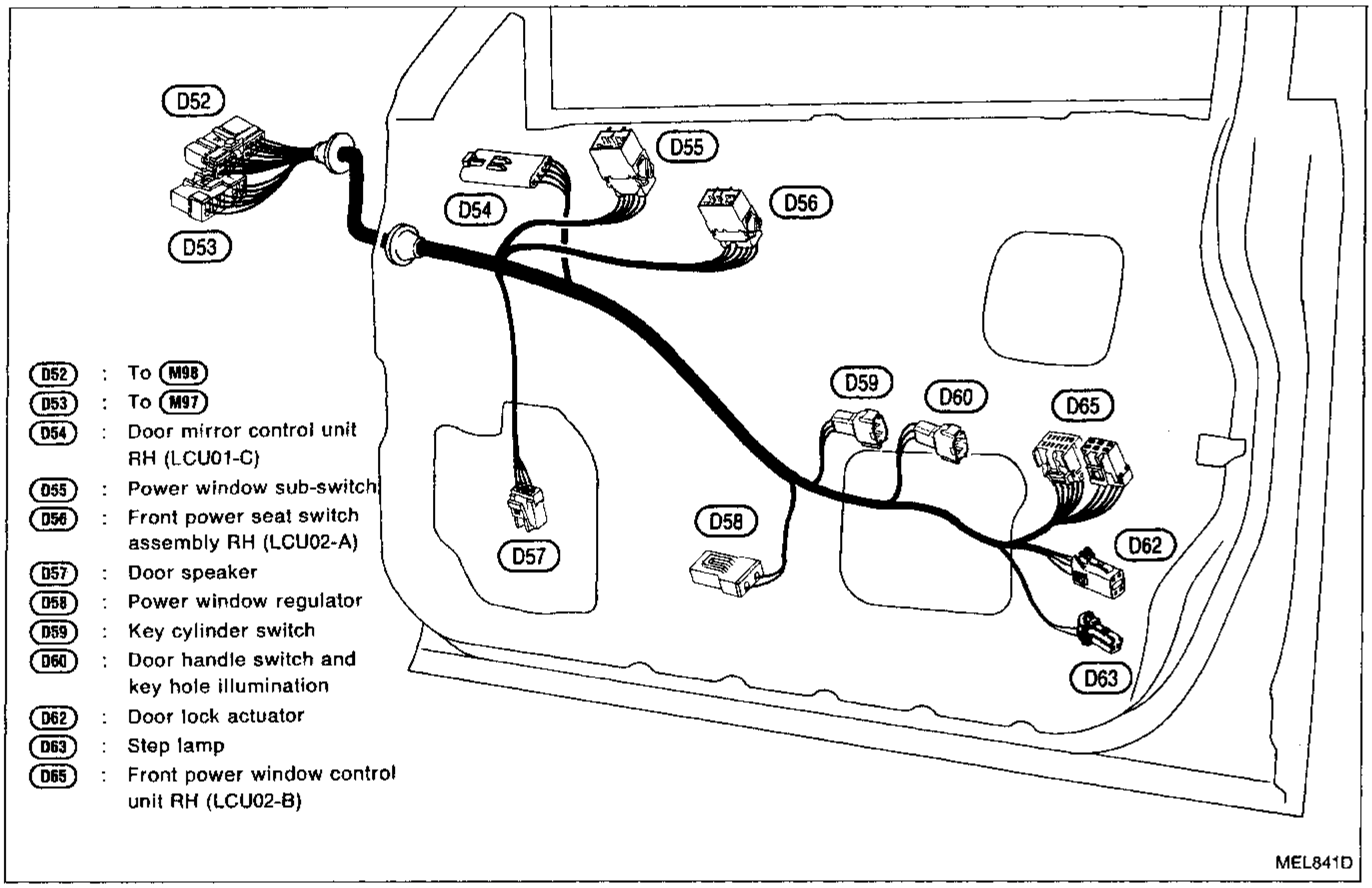


D101 : To M216
D103 : Power window sub-switch
D104 : Rear cigarette lighter illumination
D105 : Rear cigarette lighter
D106 : Power window regulator
D107 : Step lamp
D108 : Door lock actuator
D109 : Rear power window control unit LH (LCU04)

MEL840D

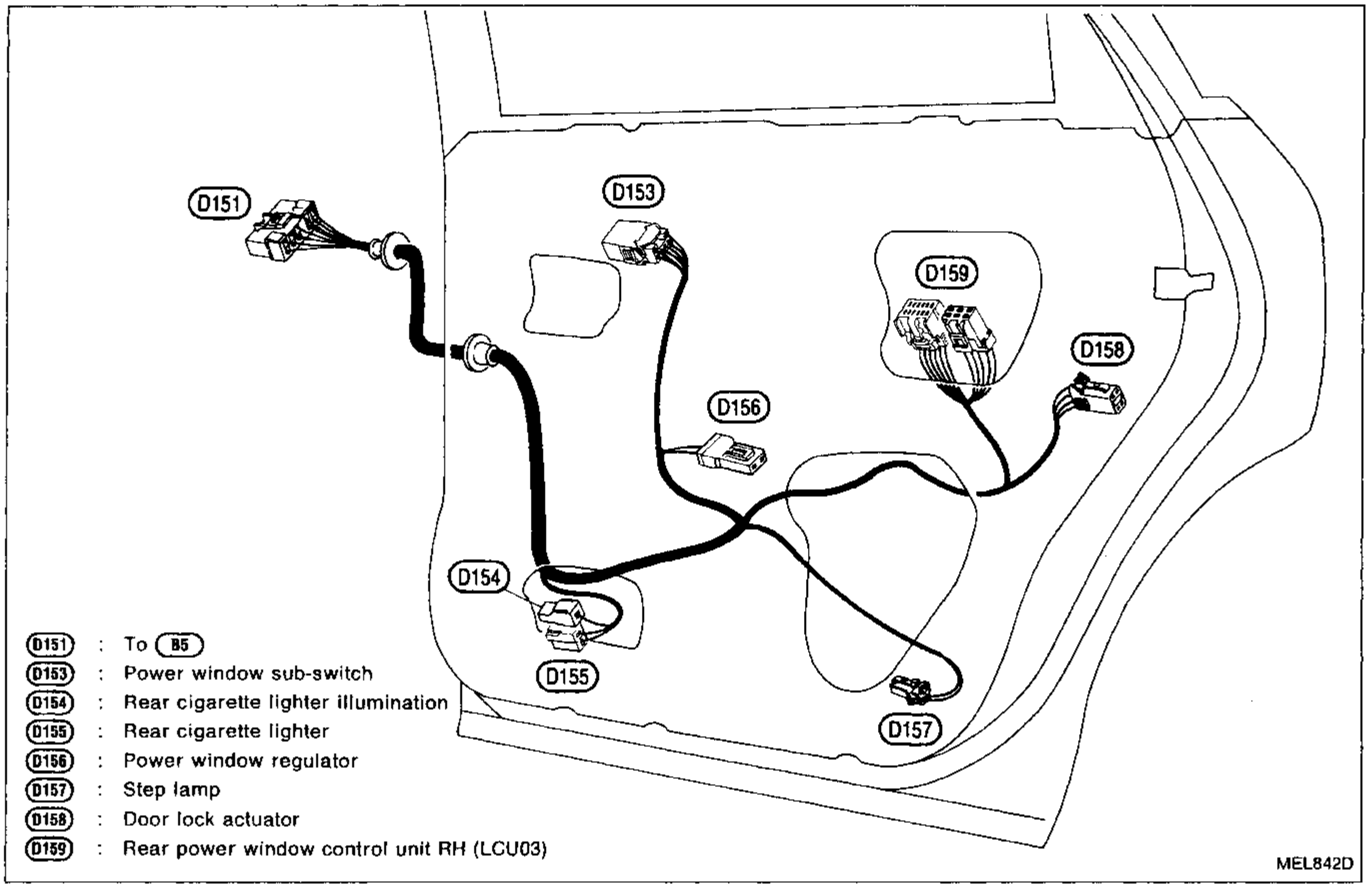
Door Harness (RH side)

FRONT



D52 : To M98
D53 : To M97
D54 : Door mirror control unit RH (LCU01-C)
D55 : Power window sub-switch
D56 : Front power seat switch assembly RH (LCU02-A)
D57 : Door speaker
D58 : Power window regulator
D59 : Key cylinder switch
D60 : Door handle switch and key hole illumination
D62 : Door lock actuator
D63 : Step lamp
D65 : Front power window control unit RH (LCU02-B)

REAR



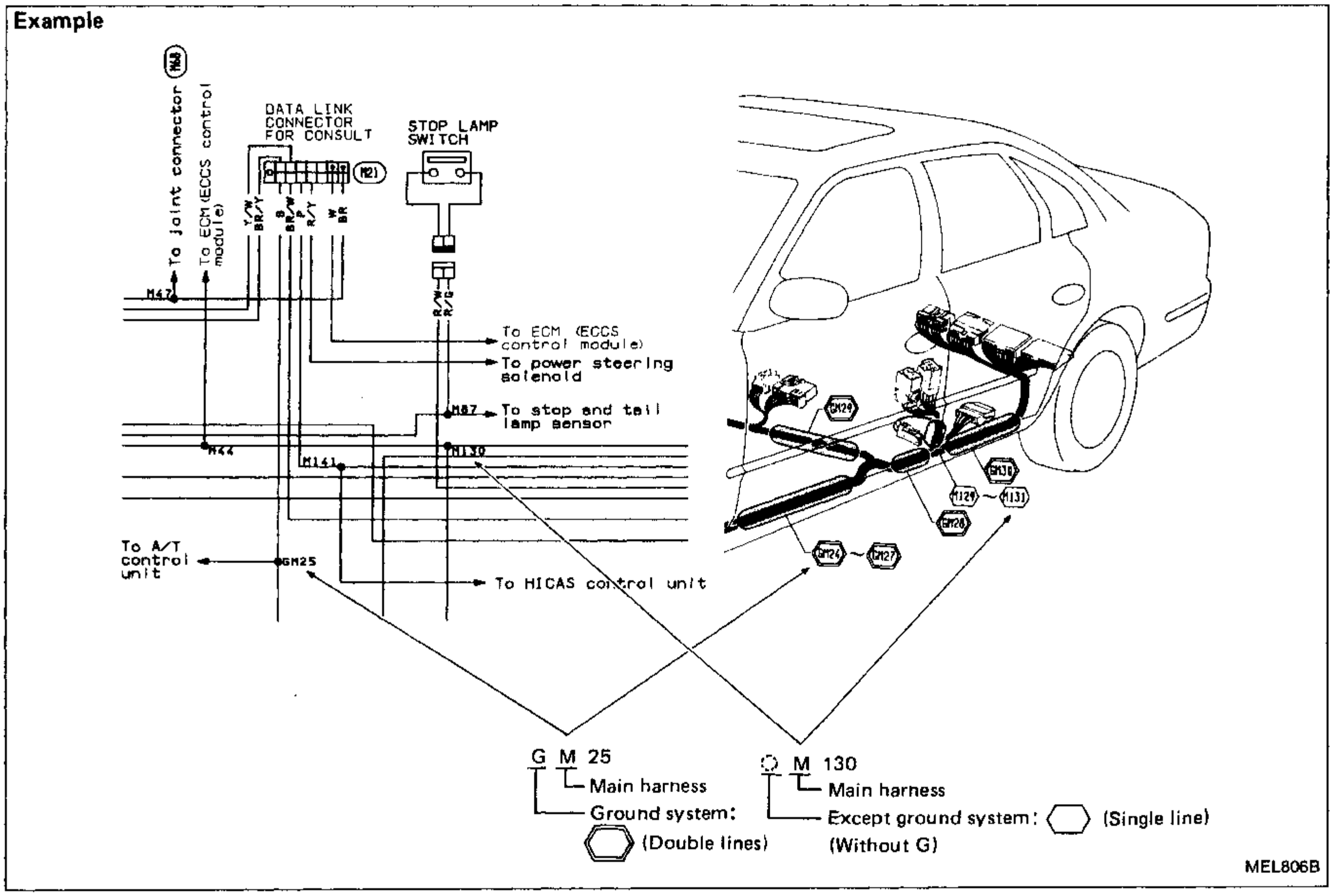
D151 : To B5
D153 : Power window sub-switch
D154 : Rear cigarette lighter illumination
D155 : Rear cigarette lighter
D156 : Power window regulator
D157 : Step lamp
D158 : Door lock actuator
D159 : Rear power window control unit RH (LCU03)

SPLICE LOCATION

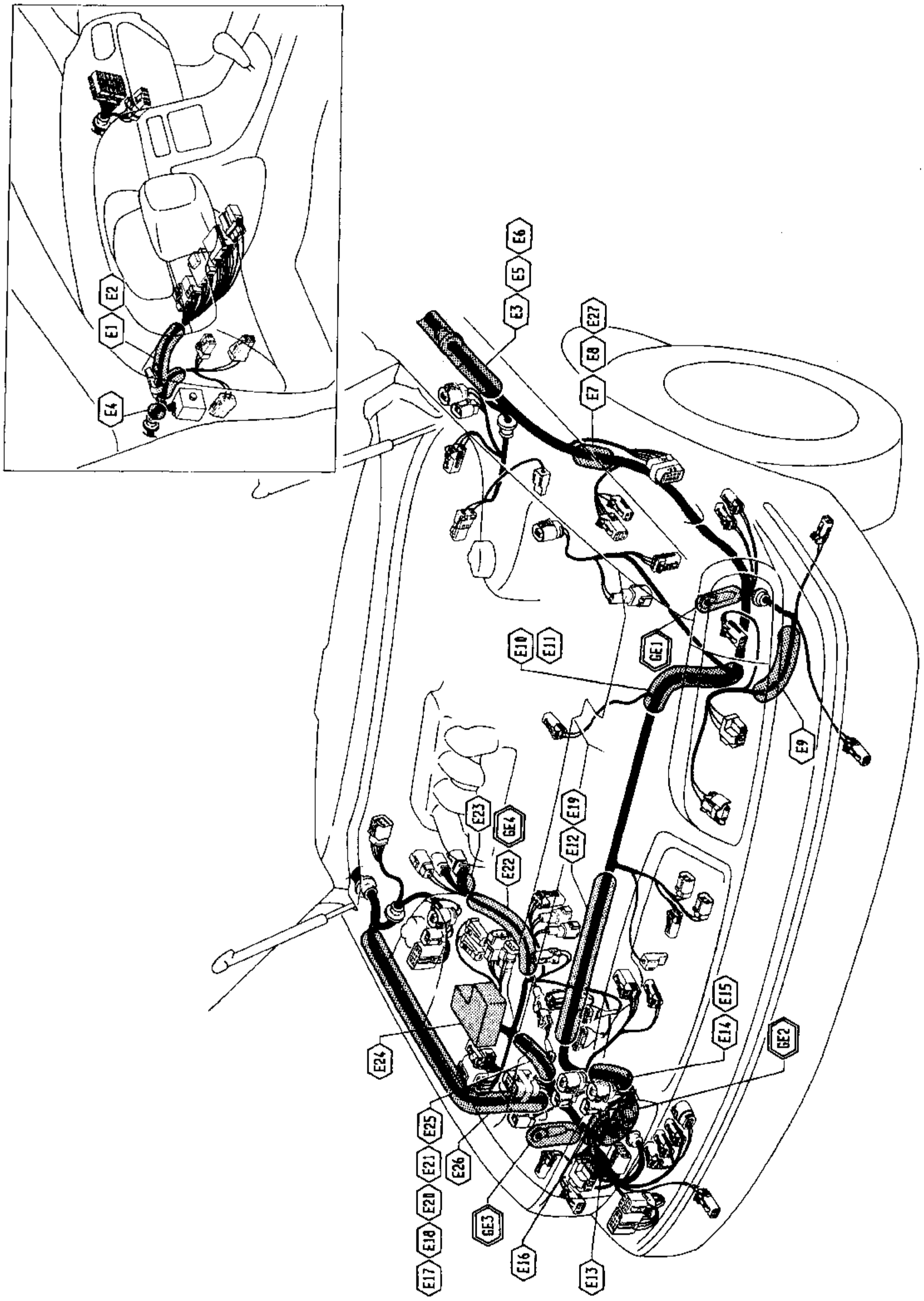
How to Read Splice Location

- "GM25", "M130" etc., which are shown in the wiring diagram, refer to wiring harness splice points. These points are located in shaded areas "GM25", "M130", etc. in illustrations under the title "SPLICE LOCATION".
- Wiring harness splice points are subject to change without prior notice.

Example

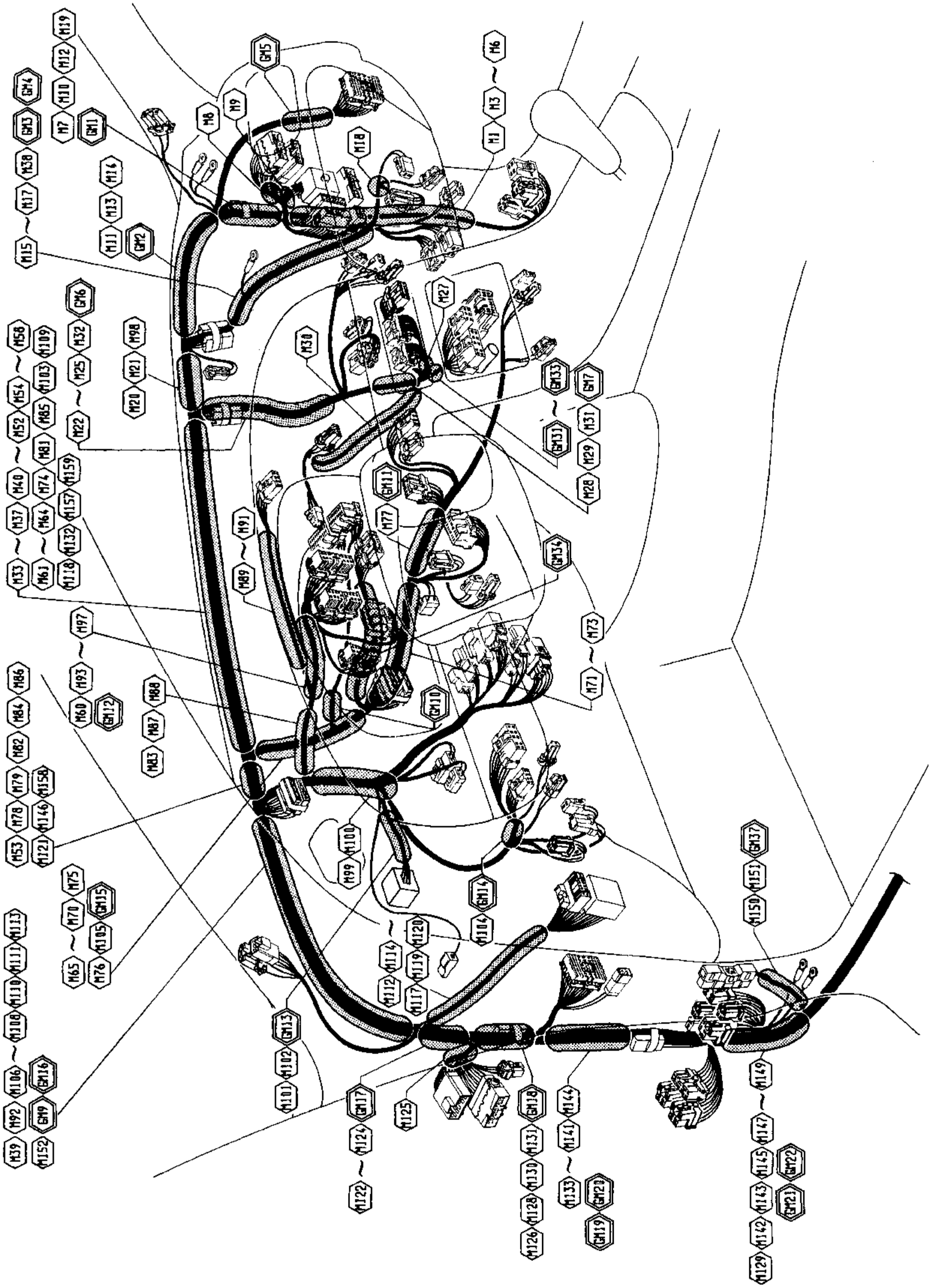


Engine Room Harness



MEL956D

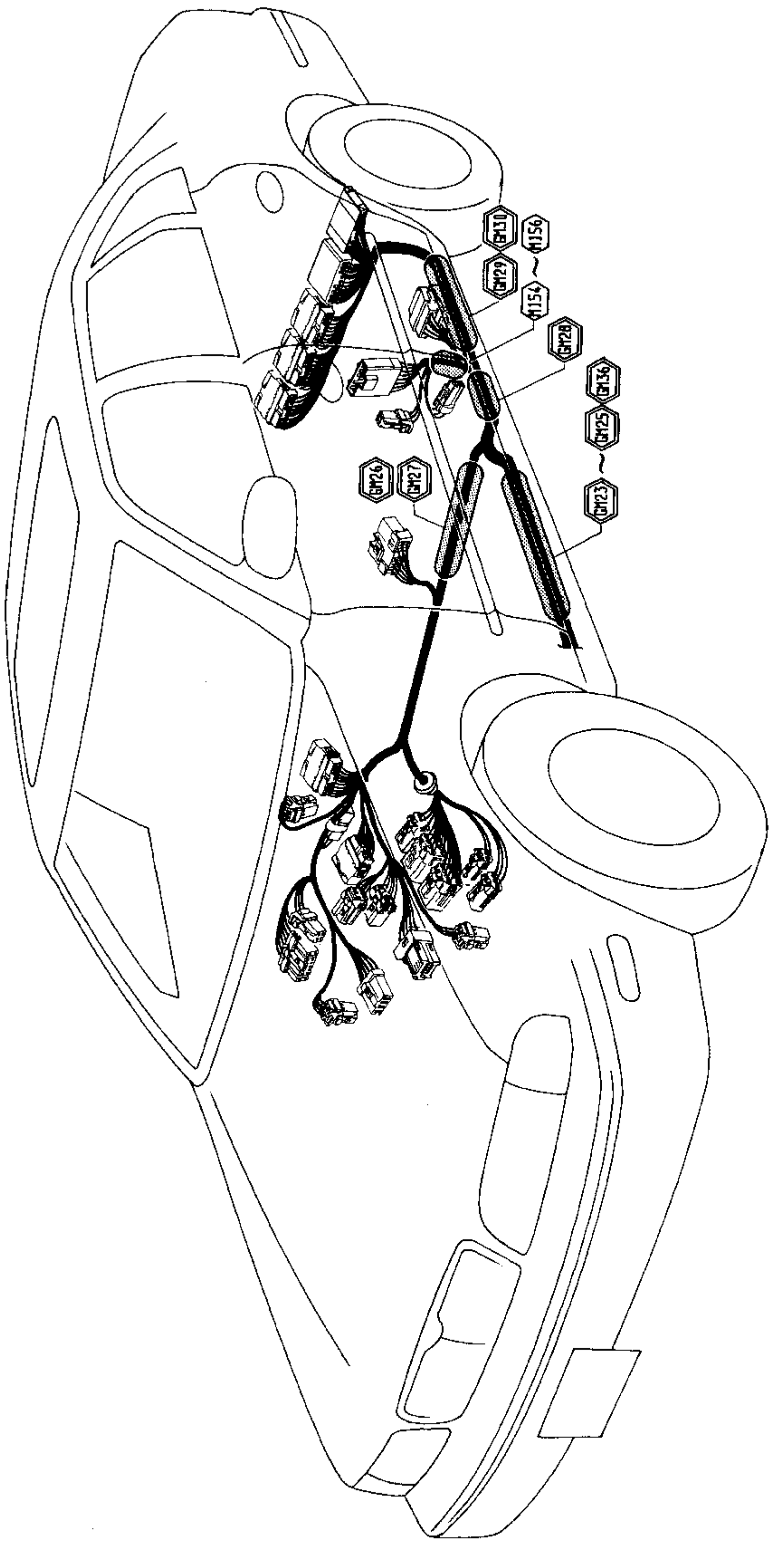
Main Harness



MEL957D

SPLICE LOCATION

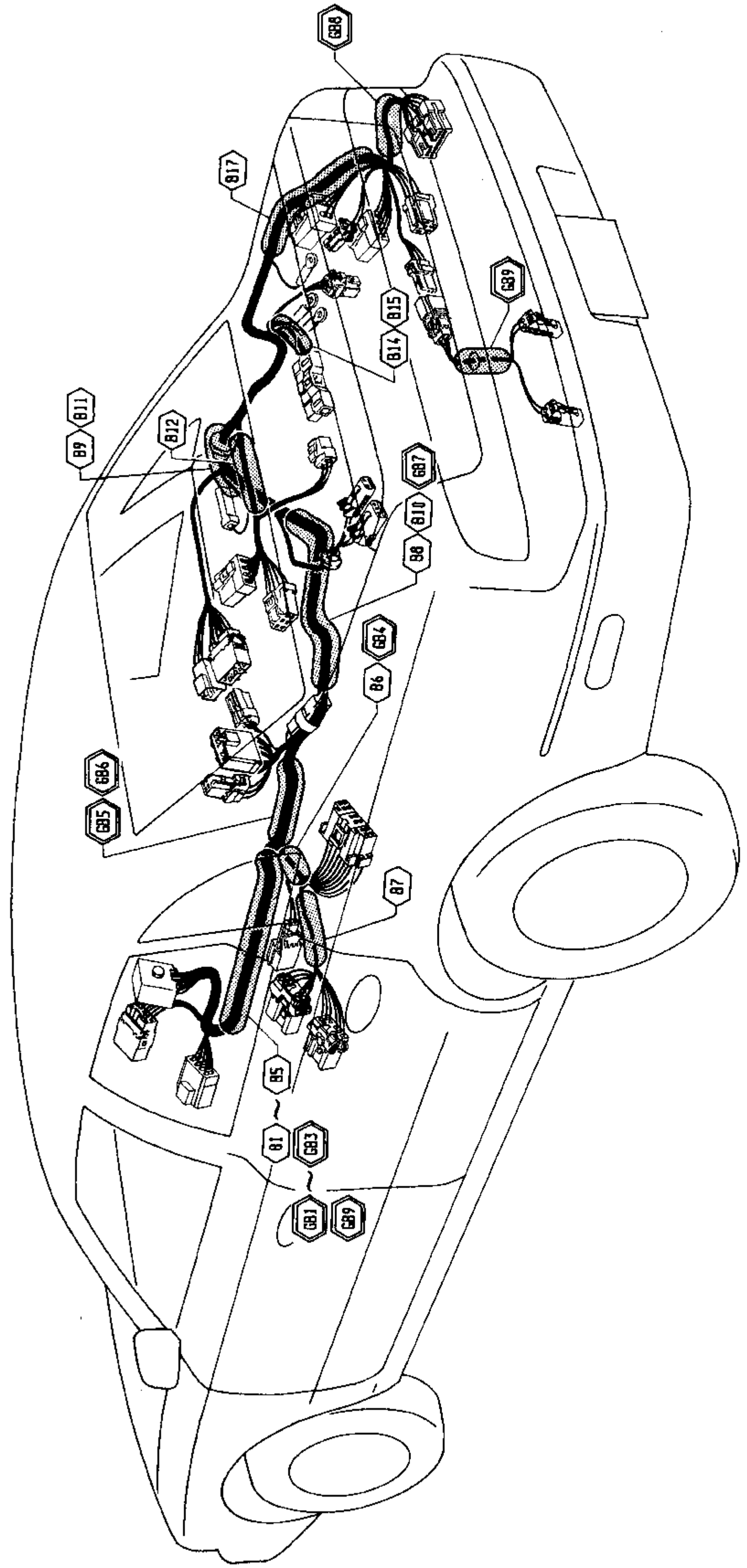
Main Harness (Cont'd)



MEL958D

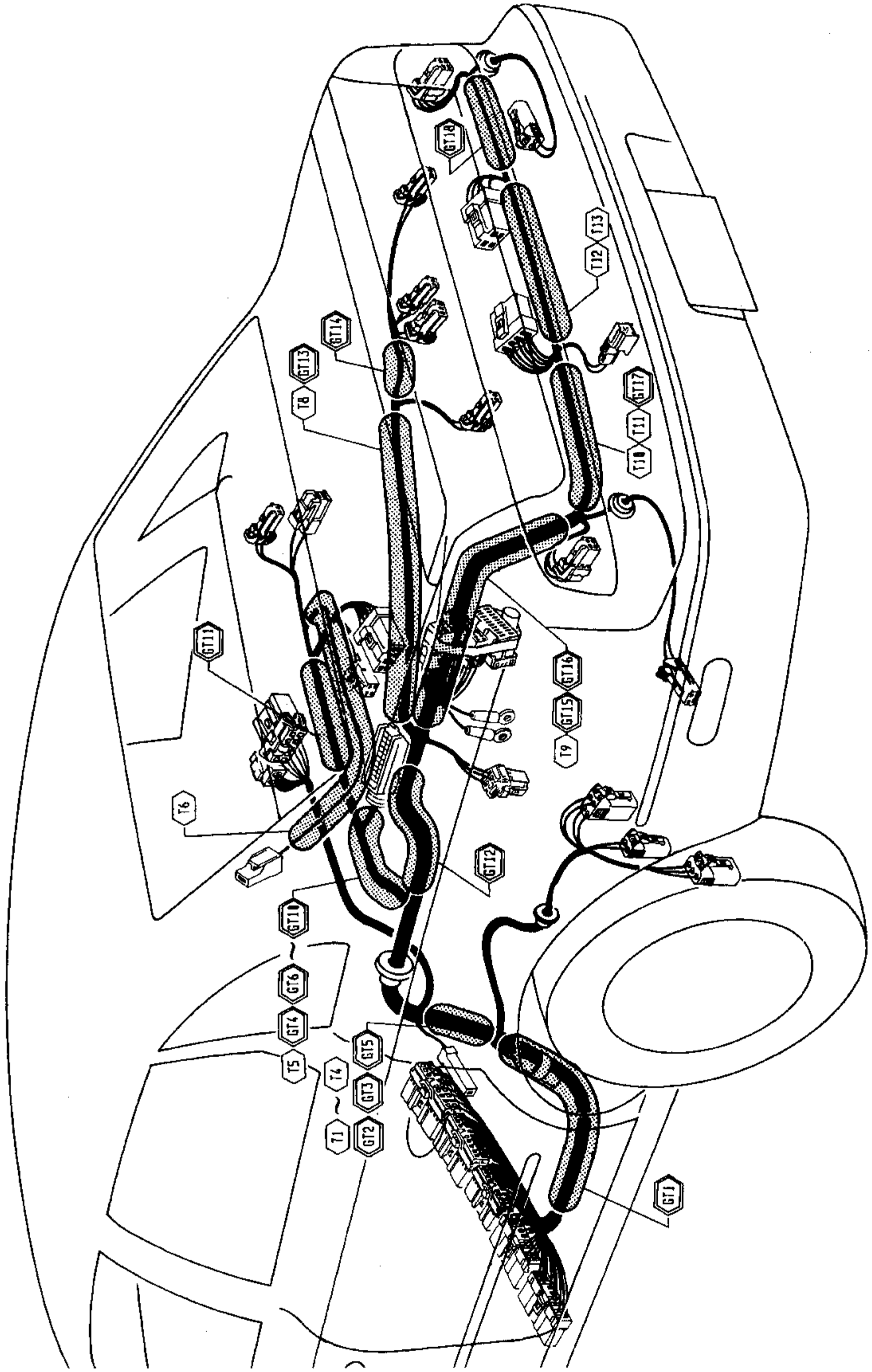
SPLICE LOCATION

Body Harness



MEL959D

Tail Harness

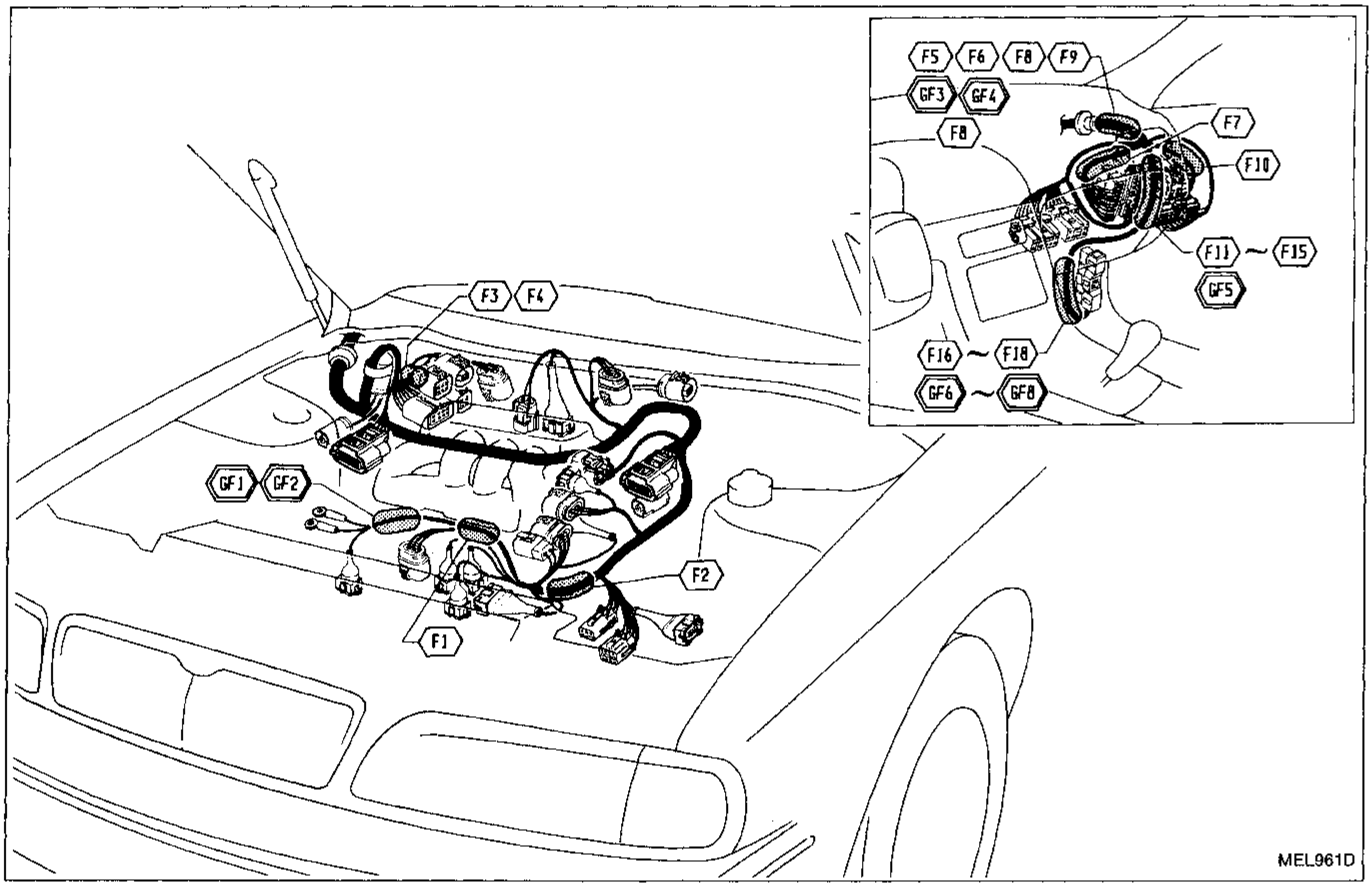


MEL960D

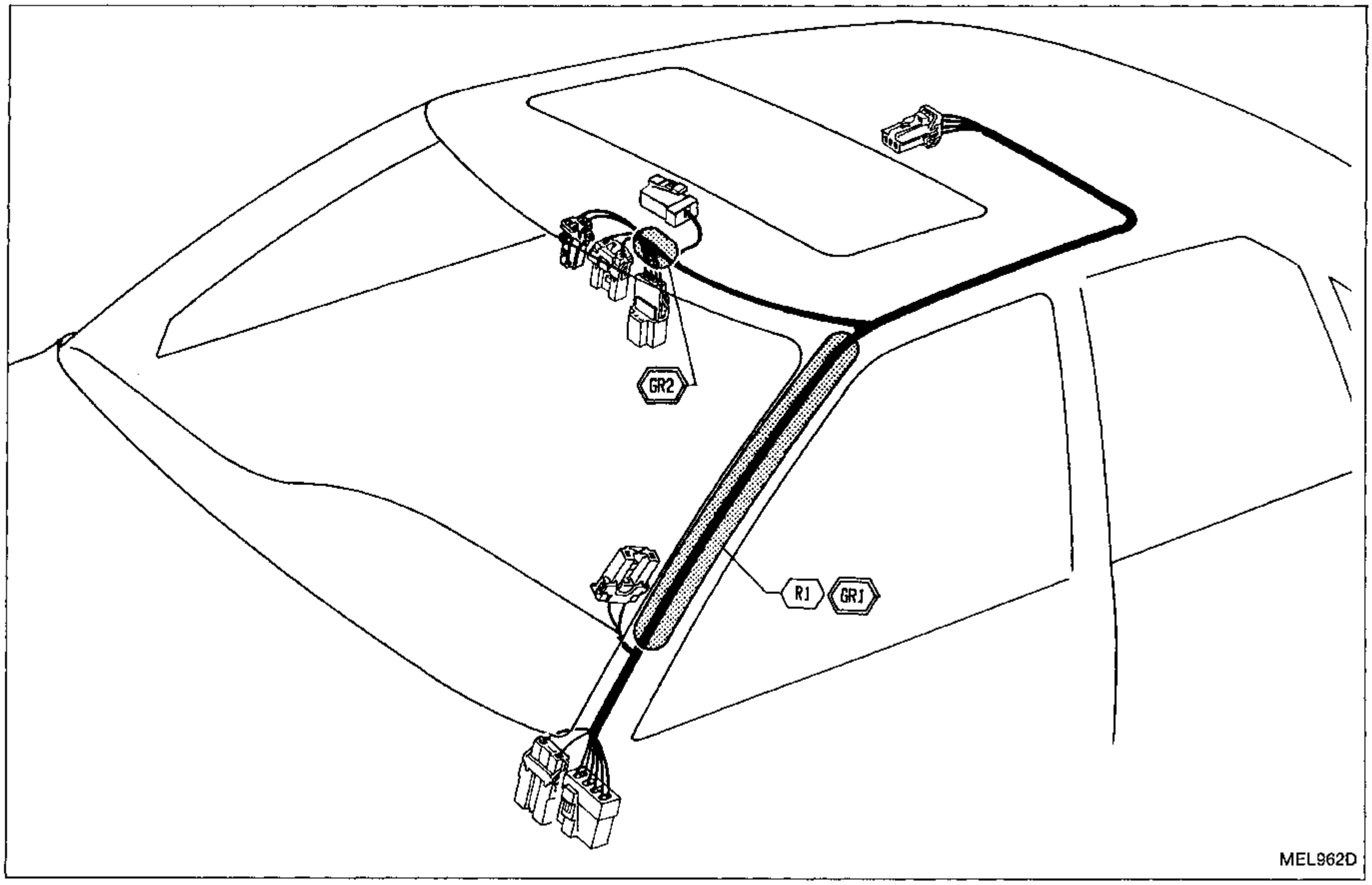
GI
MA
EM
LC
EF &
EC
FE
AT
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

SPLICE LOCATION

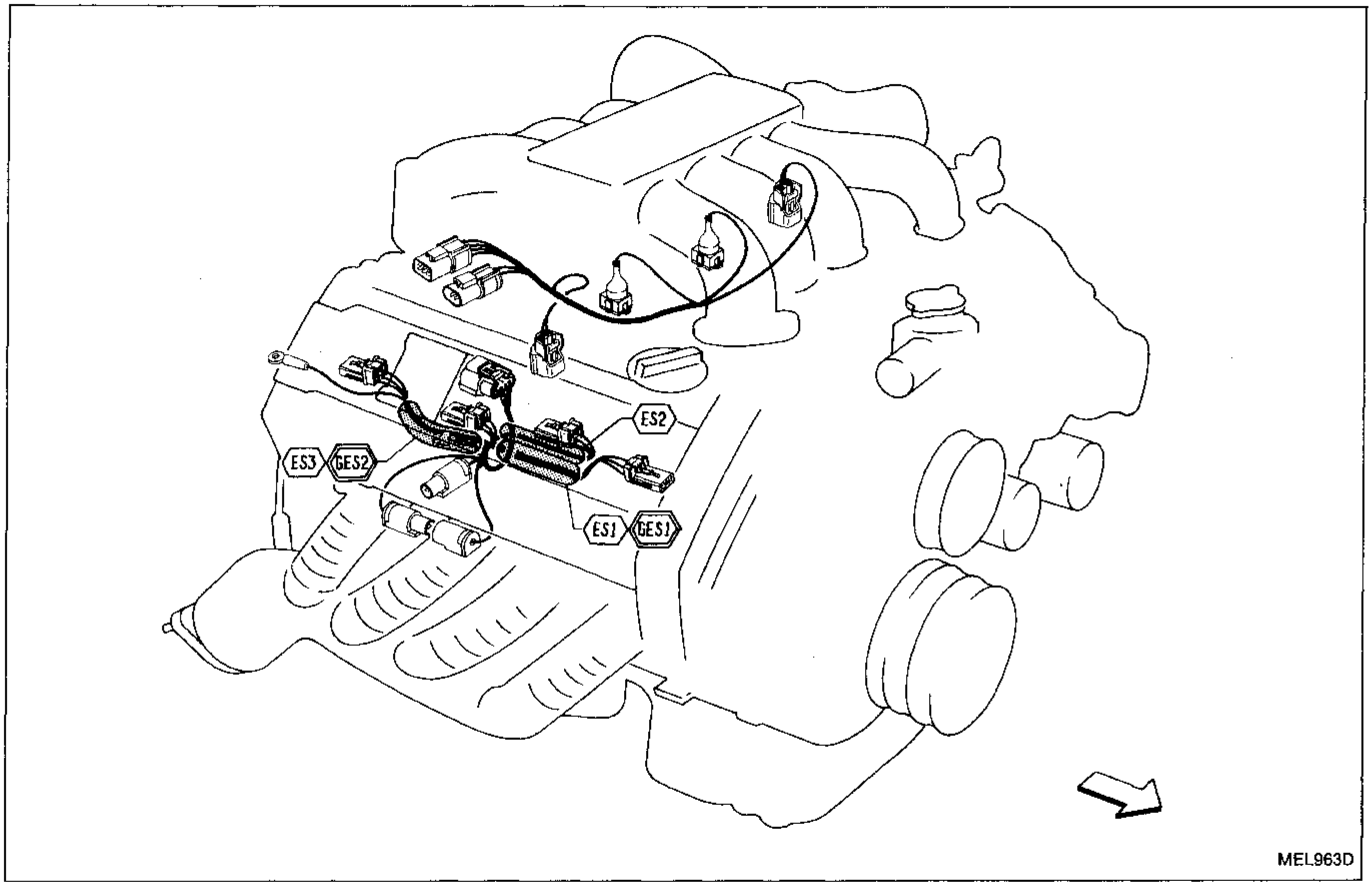
Engine Control Harness

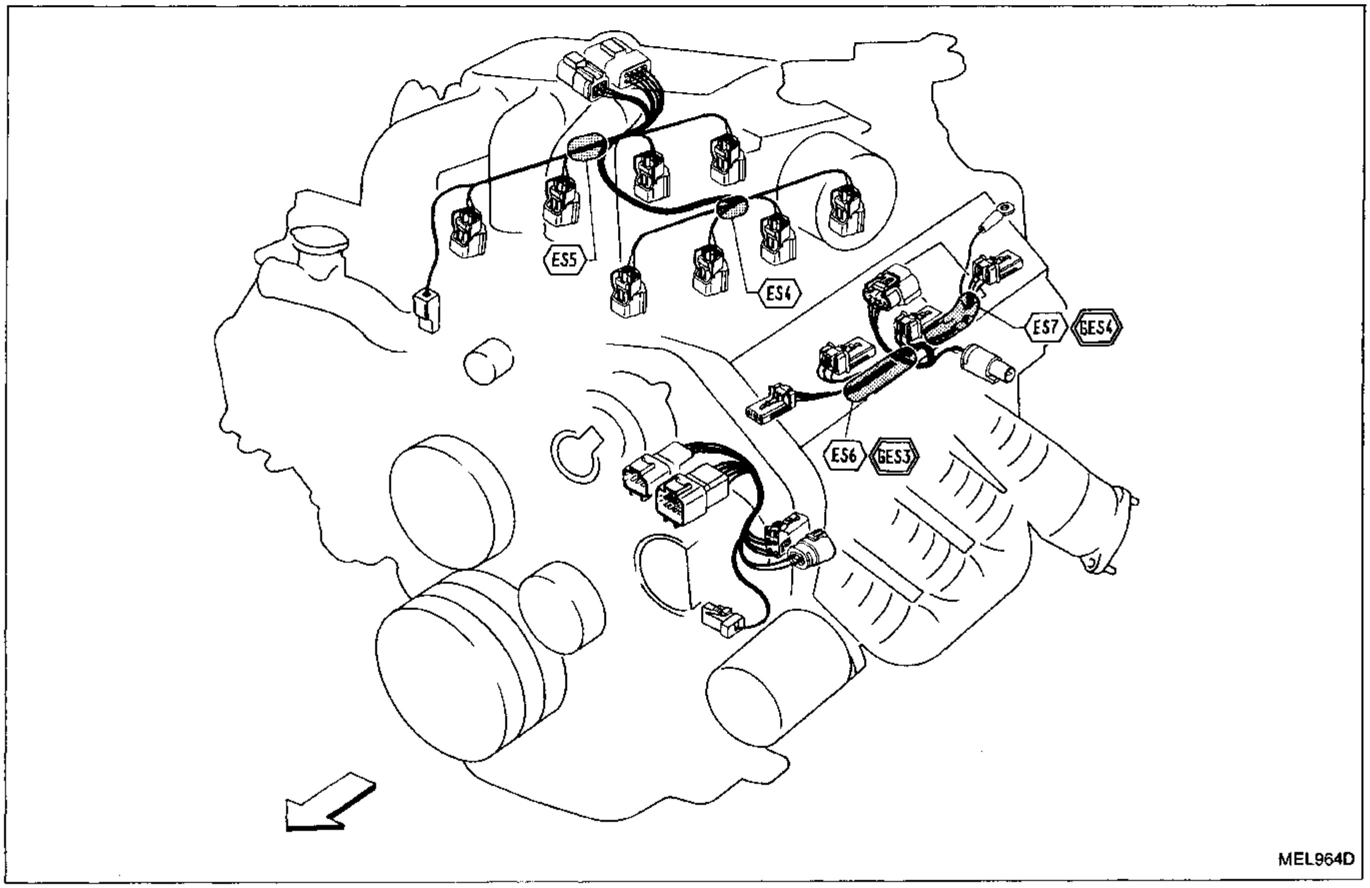


Room Lamp Harness



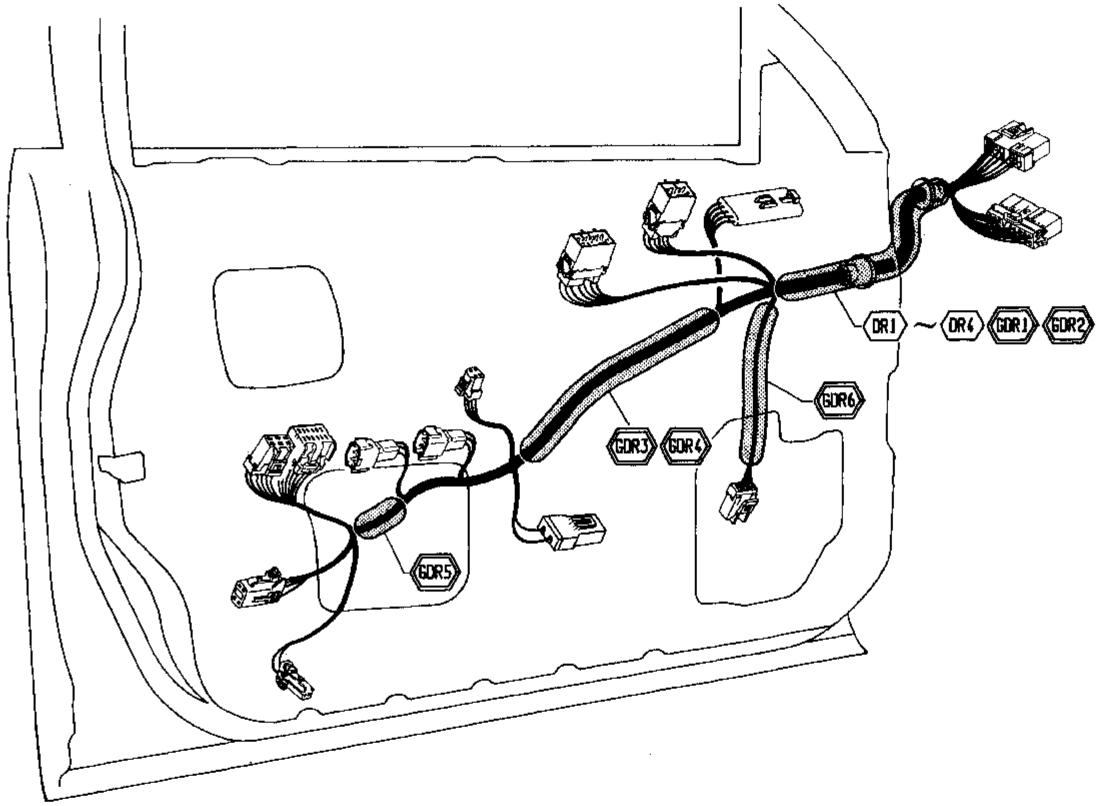
Engine Control Sub-harness

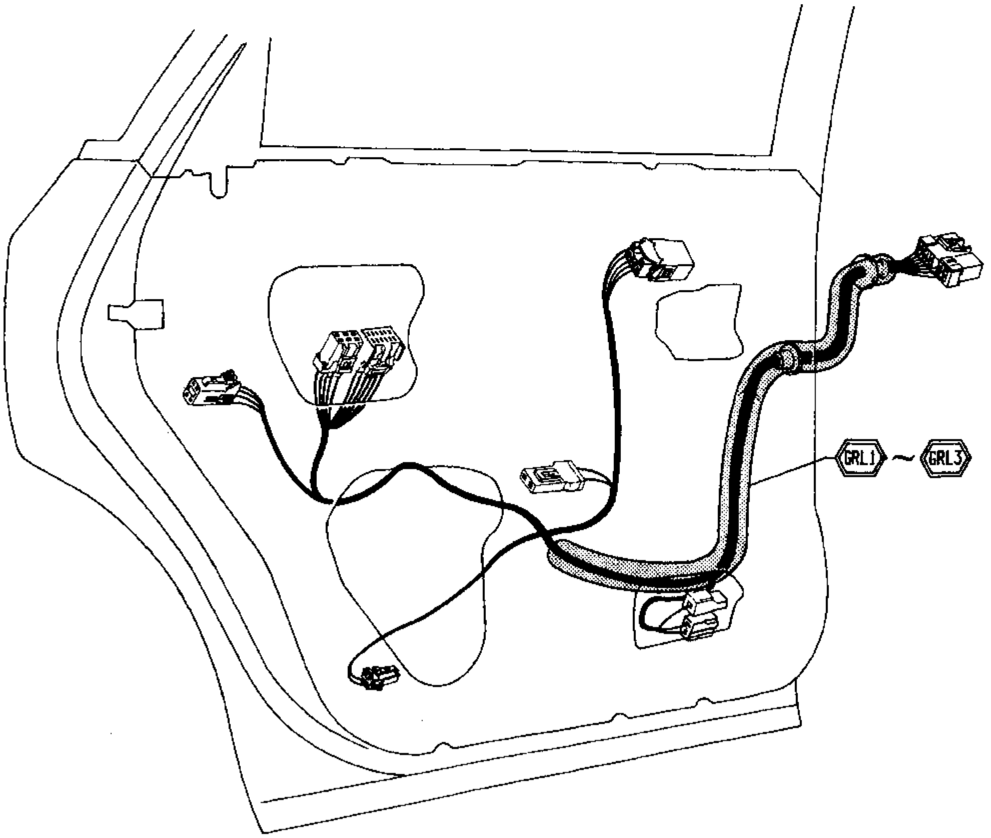




Door Harness

LH SIDE

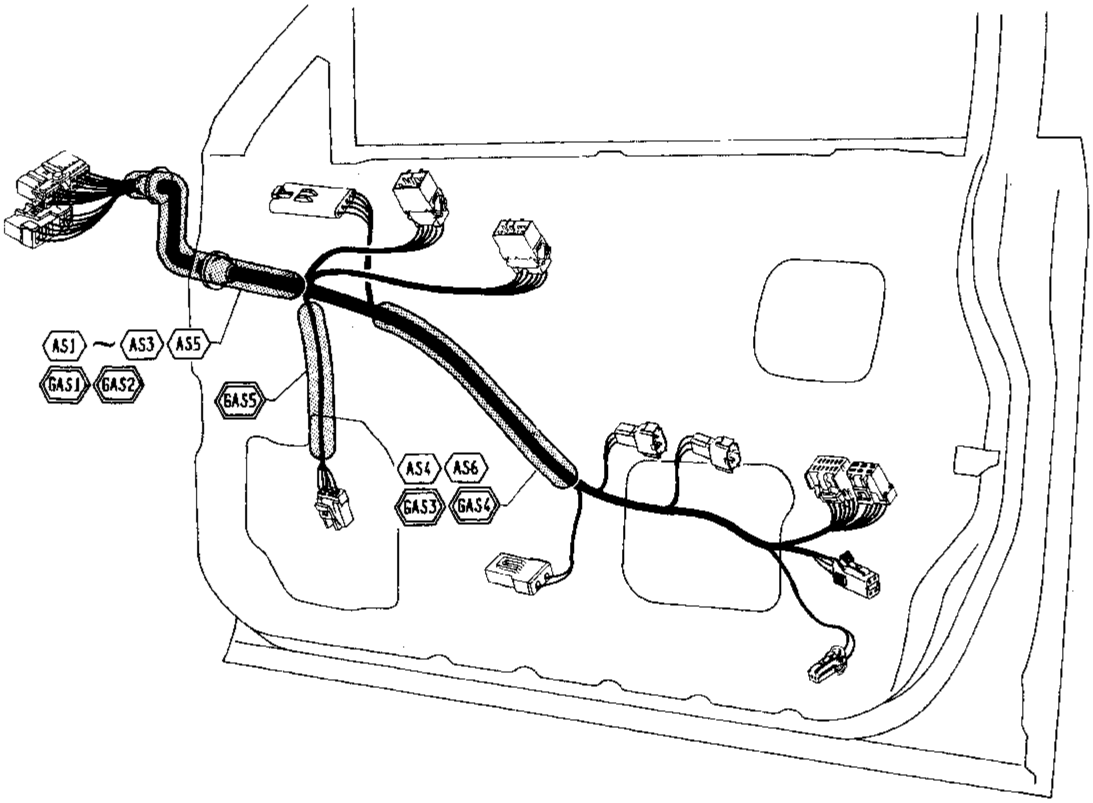


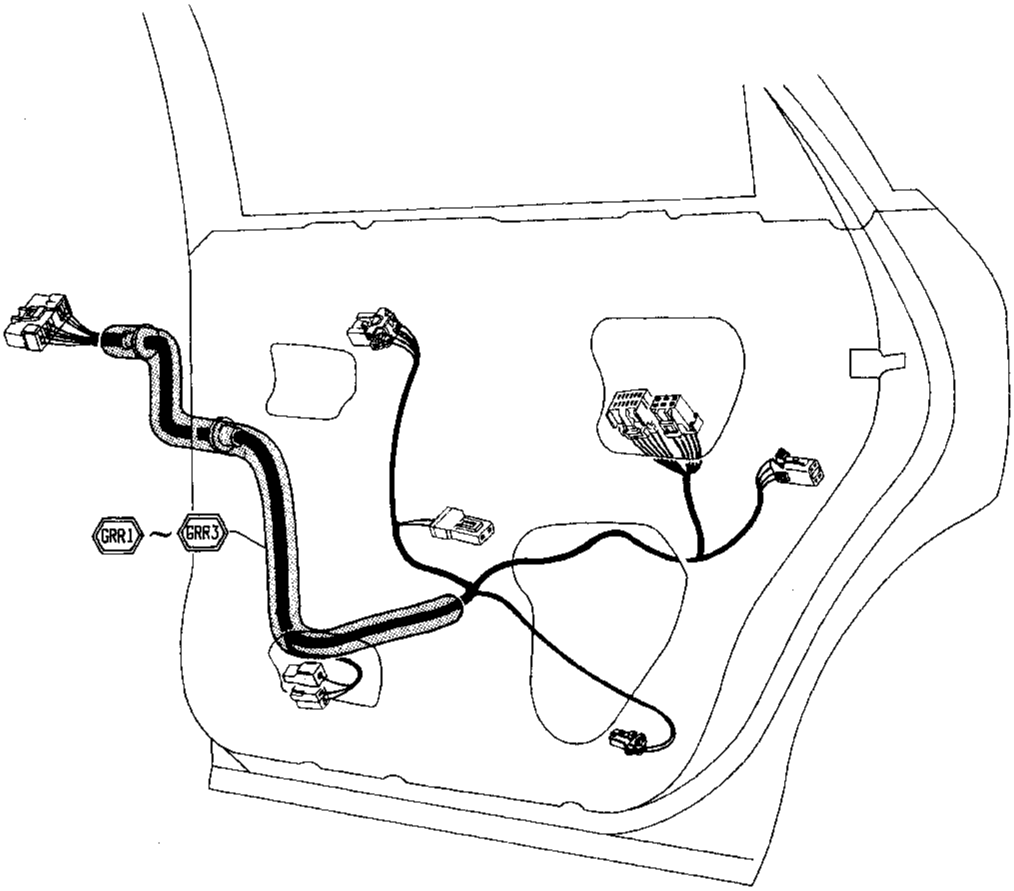


MEL965D

Door Harness (Cont'd)

RH SIDE

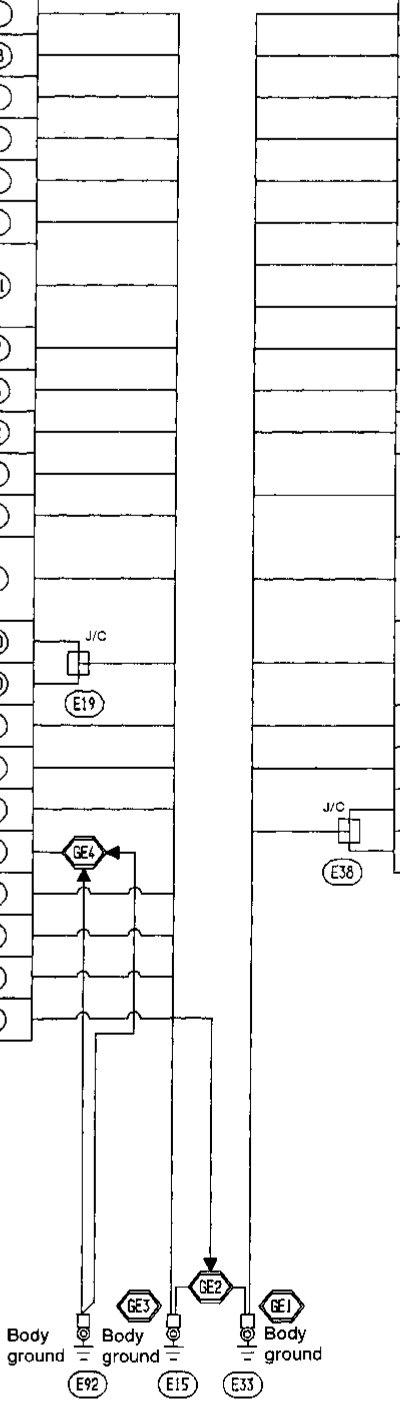




MEL966D

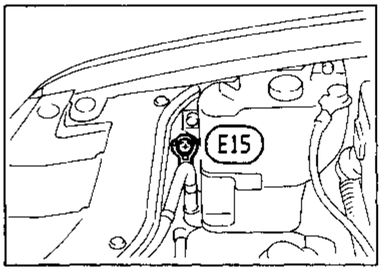
Engine room harness

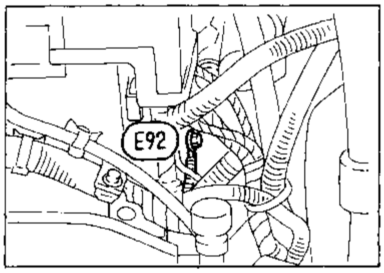
CONNECT TO	CON- NECTOR NUMBER
Actuator (For ABS)	E7
To engine harness (For EPS solenoid)	E48
N & P relay	E8
N & P relay	E8
Starter relay	E4
ASCD hold relay	E8
To body harness (For active suspension)	E111
Front combination lamp RH	E17
Front side marker lamp RH	E16
Washer sensor	E22
Wiper motor	E1
Wiper amplifier	E2
Oil pressure switch (For active suspension)	E63
To main harness (For TCS)	E110
To main harness (For ABS)	E110
Front pressure control unit	E58
Front pressure control unit	E57
Daytime light control unit	E55
TCS actuator	E53
Front fog lamp RH	E75
Headlamp relay unit	E12
Actuator (For TCS)	E7
Loading pump (For TCS)	E54

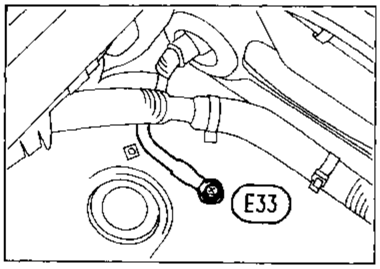


CON- NECTOR NUMBER	CONNECT TO
E35	Thermoswitch
E109	Combination switch
E109	Combination switch
E109	Combination switch
E32	Front combination lamp LH
E34	Front side marker lamp LH
E44	Brake fluid level switch
E41	Hood switch
E107	Headlamp sensor
E107	Headlamp sensor
E25	A/C pressure switch
E65	Oil level switch (For active suspension)
E67	Oil cooler fan motor (For active suspension)
E68	Multi valve unit (For active suspension)
E76	Front fog lamp LH
E72	Cooling fan motor
E102	To main harness (For TCS)
E102	To main harness (For ABS)

J/C: Joint connector

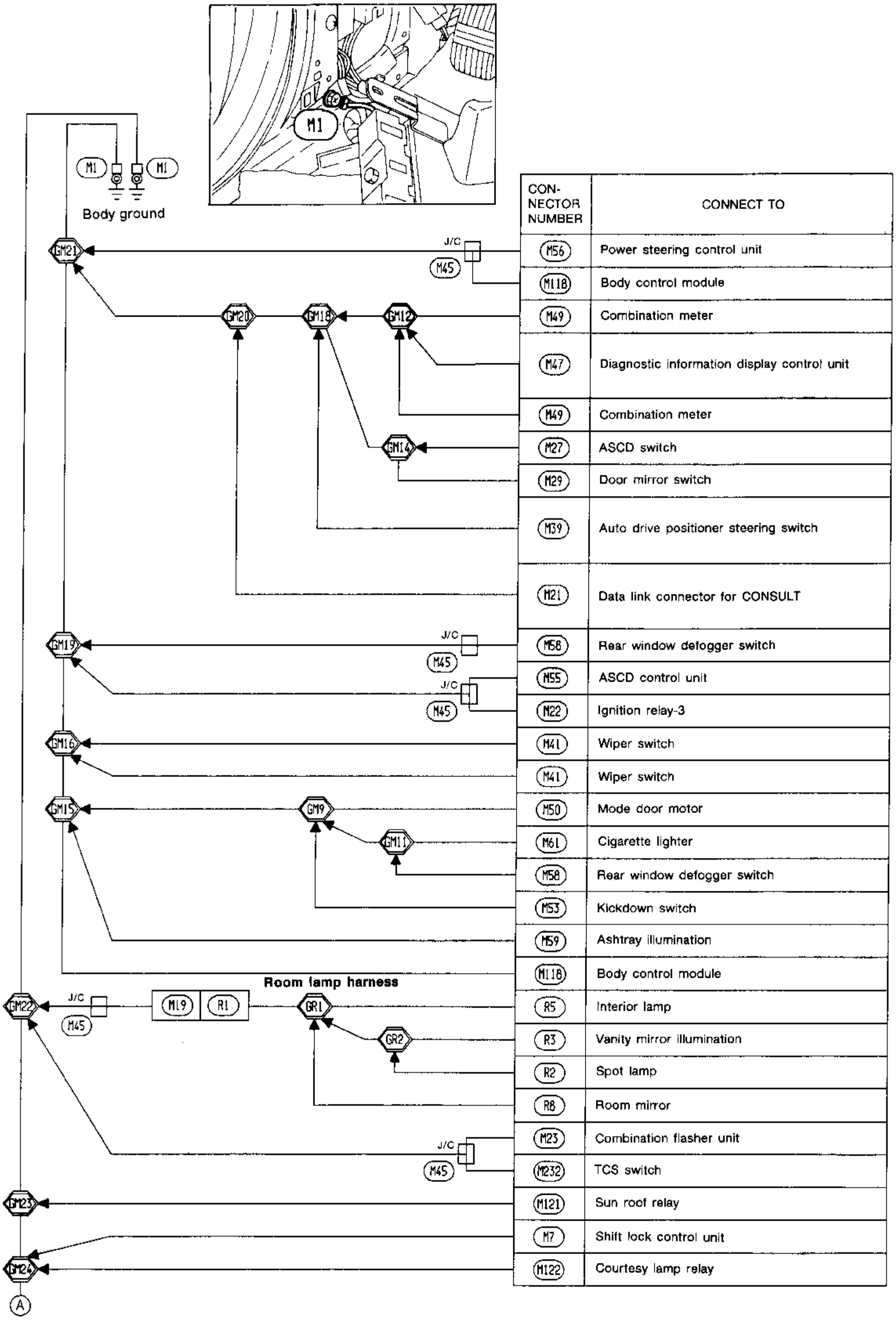






MEL974D

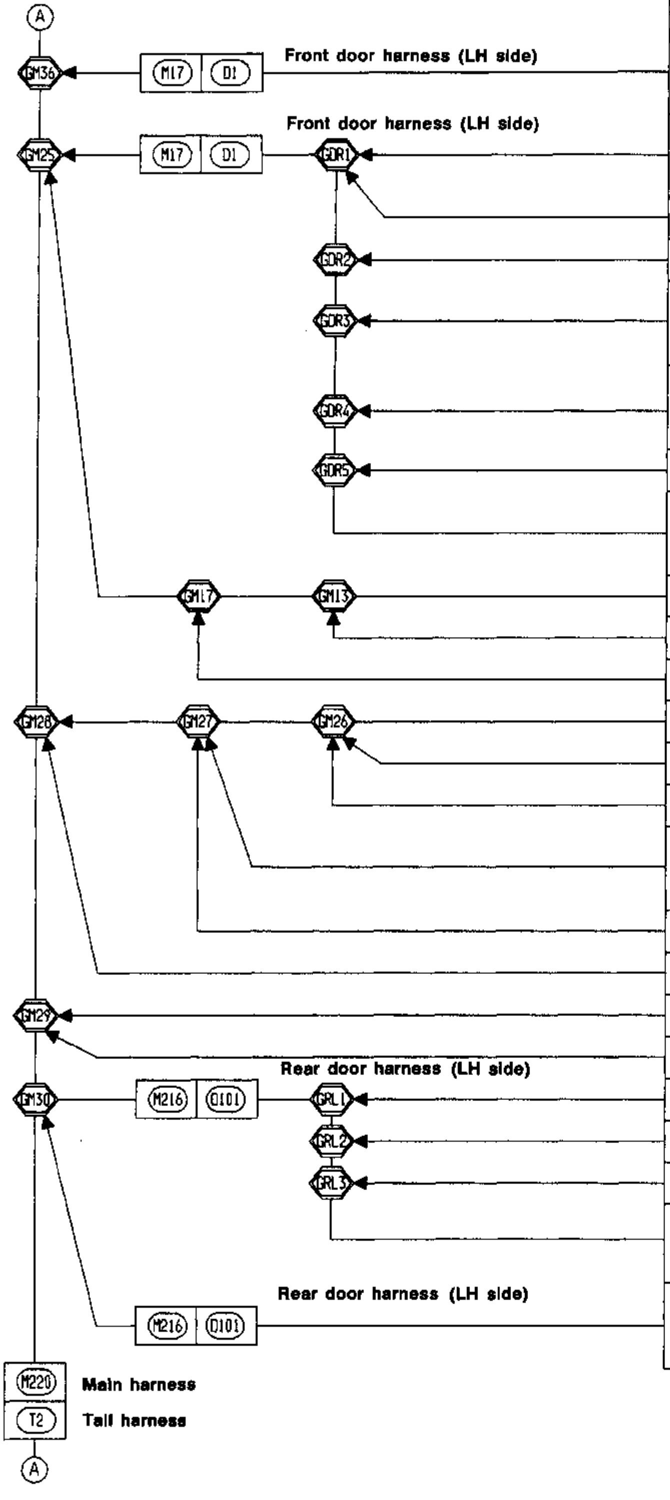
Main harness (LH side)



CON-NECTOR NUMBER	CONNECT TO
M56	Power steering control unit
M118	Body control module
M49	Combination meter
M47	Diagnostic information display control unit
M49	Combination meter
M27	ASCD switch
M29	Door mirror switch
M39	Auto drive positioner steering switch
M21	Data link connector for CONSULT
M58	Rear window defogger switch
M55	ASCD control unit
M22	Ignition relay-3
M41	Wiper switch
M41	Wiper switch
M50	Mode door motor
M61	Cigarette lighter
M58	Rear window defogger switch
M53	Kickdown switch
M59	Ashtray illumination
M118	Body control module
R5	Interior lamp
R3	Vanity mirror illumination
R2	Spot lamp
R8	Room mirror
M23	Combination flasher unit
M232	TCS switch
M121	Sun roof relay
M7	Shift lock control unit
M122	Courtesy lamp relay

MEL975D

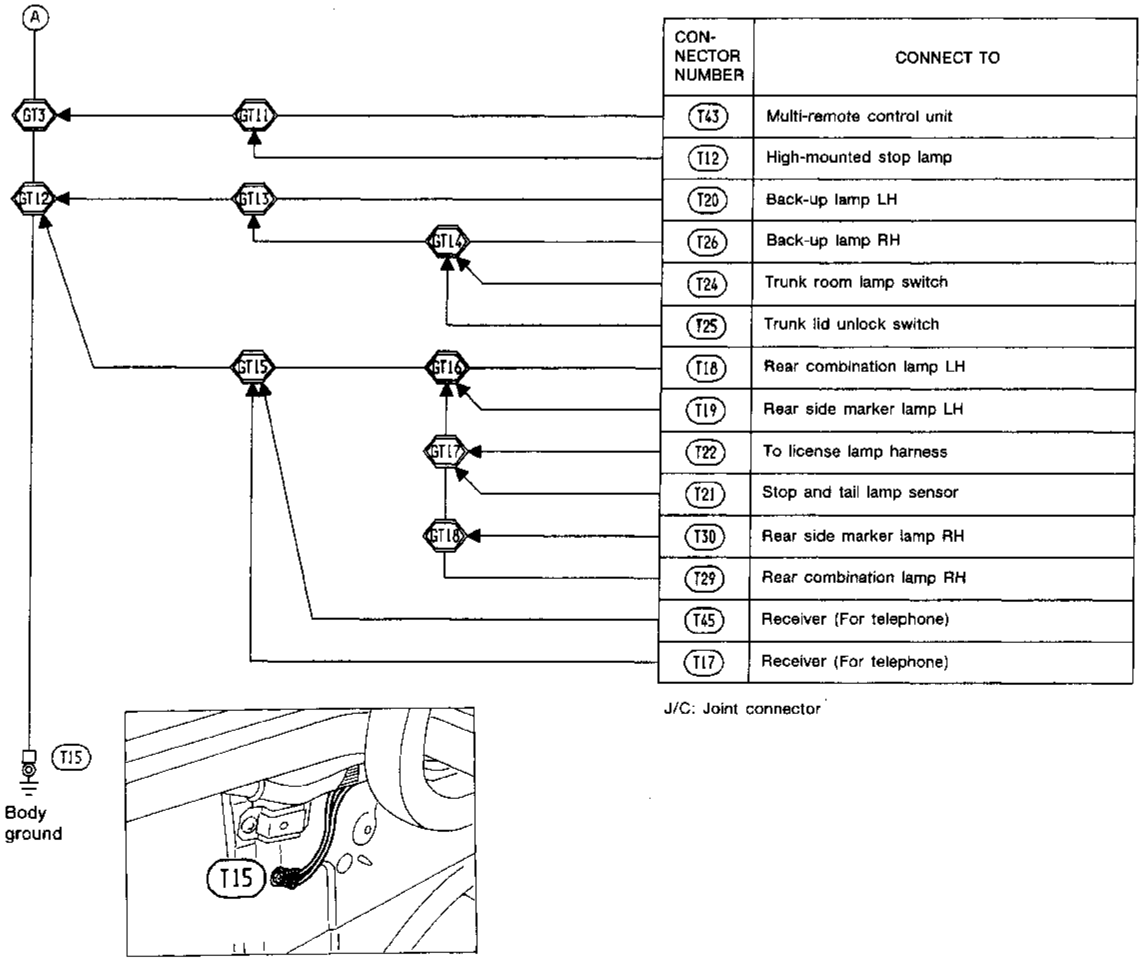
GROUND DISTRIBUTION



CON-NECTOR NUMBER	CONNECT TO
D12	Front power window control unit LH (LCU01-B)
D6	Front power seat switch assembly LH (LCU01-A)
D4	Door mirror
D10	Key cylinder switch
D11	Door handle switch and key hole illumination
D9	Trunk lid and fuel lid opener switch
D14	Door lock actuator
D12	Front power window control unit LH (LCU01-B)
M118	Body control module
M118	Body control module
M20	Fuse block
M213	To power seat harness LH
M213	To power seat harness LH
M207	Handset & speaker
M204	Shift lock solenoid & detention switch
M203	Power window console switch LH
M213	To power seat harness LH
M214	Front door switch LH
M231	Seat heater switch LH
D105	Rear cigarette lighter
D103	Power window sub-switch
D108	Door lock actuator
D109	Rear power window control unit LH (LCU04)
D109	Rear power window control unit LH (LCU04)

MEL976D

GROUND DISTRIBUTION

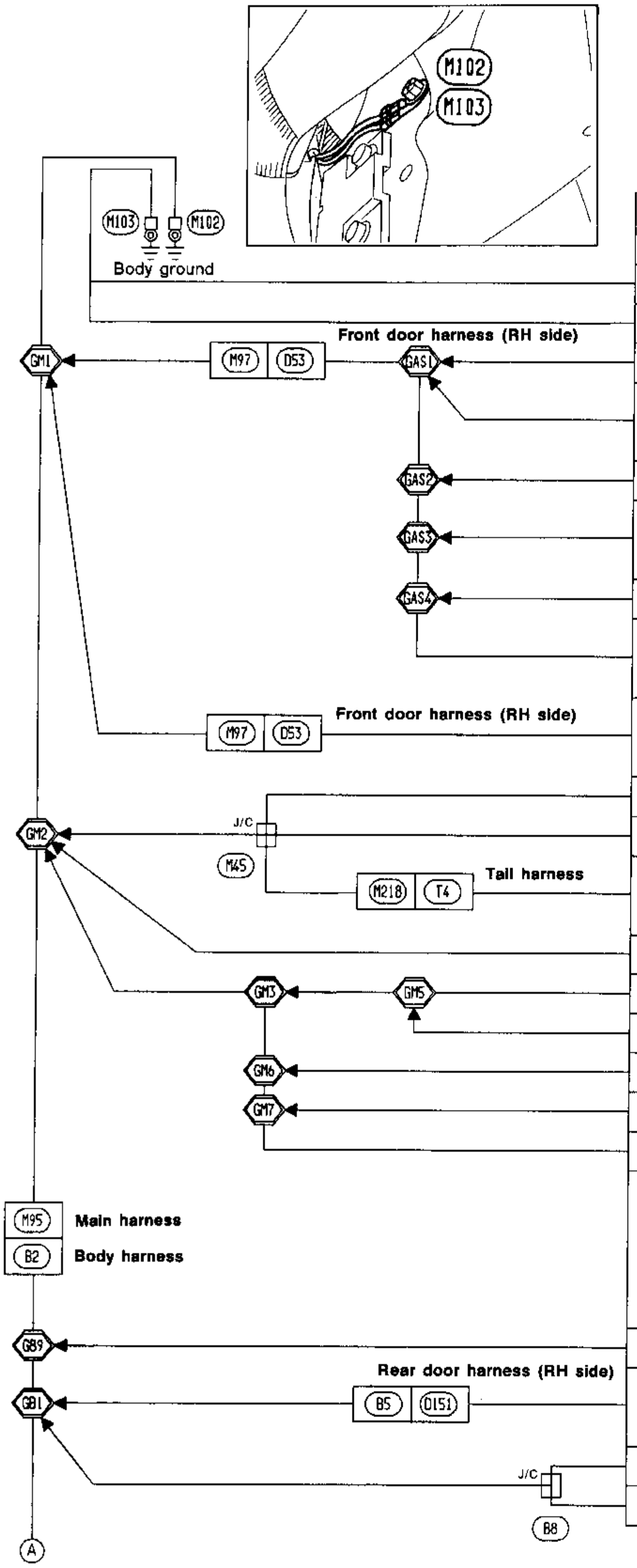


CONNECTOR NUMBER	CONNECT TO
T43	Multi-remote control unit
T12	High-mounted stop lamp
T20	Back-up lamp LH
T26	Back-up lamp RH
T24	Trunk room lamp switch
T25	Trunk lid unlock switch
T18	Rear combination lamp LH
T19	Rear side marker lamp LH
T22	To license lamp harness
T21	Stop and tail lamp sensor
T30	Rear side marker lamp RH
T29	Rear combination lamp RH
T45	Receiver (For telephone)
T17	Receiver (For telephone)

J/C: Joint connector

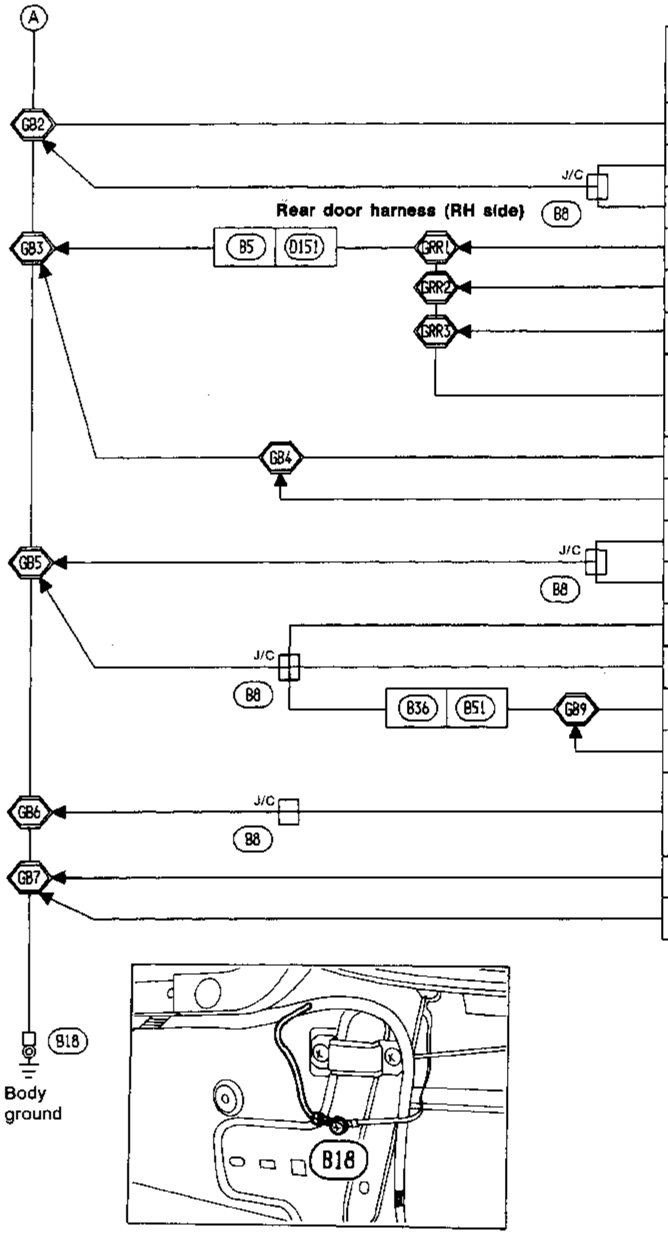
MEL977D

Main harness (RH side)



CONNECTOR NUMBER	CONNECT TO
M46	Combination meter
M88	Audio amp. relay
D54	Door mirror
D56	Front power seat switch assembly RH (LCU02-A)
D59	Key cylinder switch
D60	Door handle switch and key hole illumination
D62	Door lock actuator
D65	Front power window control unit RH (LCU02-B)
D65	Front power window control unit RH (LCU02-B)
M108	Shield wire
M65	Clock
T36	Shield wire (TCS control unit)
M76	Auto amp. (A/C)
M83	Fan control amp.
M87	Blower HI relay (A/C)
M80	Glove box lamp switch
M115	A/C switch
M62	Illumination control switch
B4	To power seat harness RH
D159	Rear power window control unit RH (LCU03)
B39	CD auto changer
B20	Power antenna timer

MEL978D

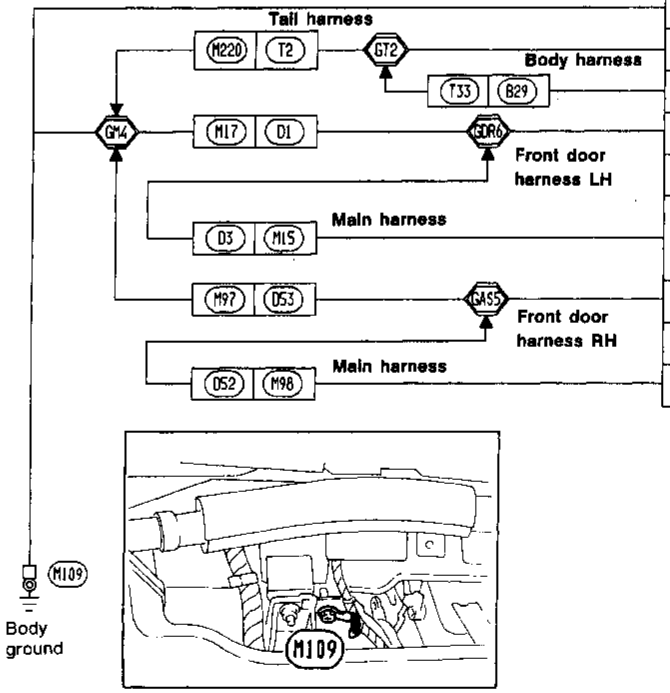


CON-NECTOR NUMBER	CONNECT TO
B54	Front door switch RH
B33	Active suspension control unit
B33	Active suspension control unit
D155	Rear cigarette lighter
D153	Power window sub-switch
D158	Door lock actuator
D159	Rear power window control unit RH (LCU03)
B4	To power seat harness RH
B37	Seat heater switch RH
B33	Active suspension control unit
B33	Active suspension control unit
B4	To power seat harness RH
B33	Active suspension control unit
B52	Rear pressure control unit
B53	Rear pressure control unit
B28	Vehicle height control switch (Active suspension)
B10	Fuel tank gauge unit
B17	Rear brake pad sensor

J/C: Joint connector

MEL979D

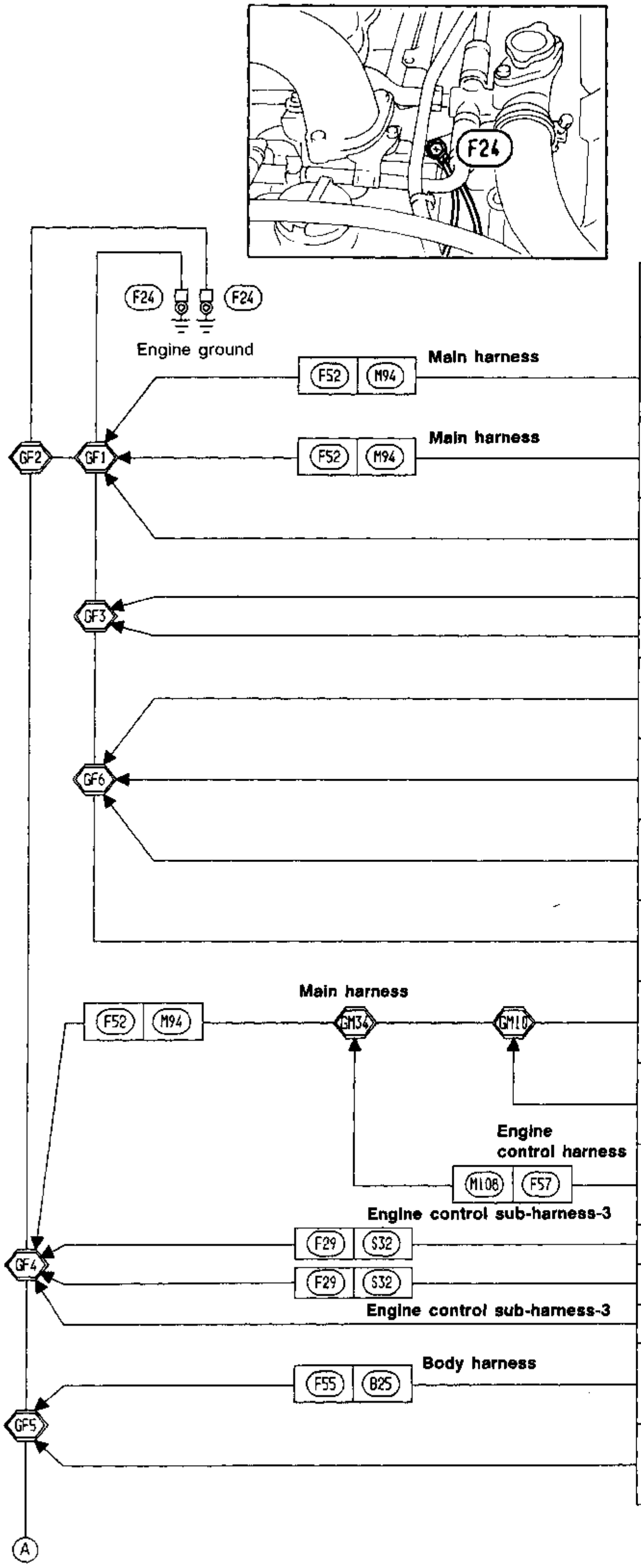
Main harness



CON-NECTOR NUMBER	CONNECT TO
M49	Combination meter
T11	Rear speaker LH
B15	Rear speaker RH
D7	Door speaker LH
M19	Shield wire (To room lamp harness)
D57	Door speaker RH
M112	Shield wire (Tweeter RH)

MEL980D

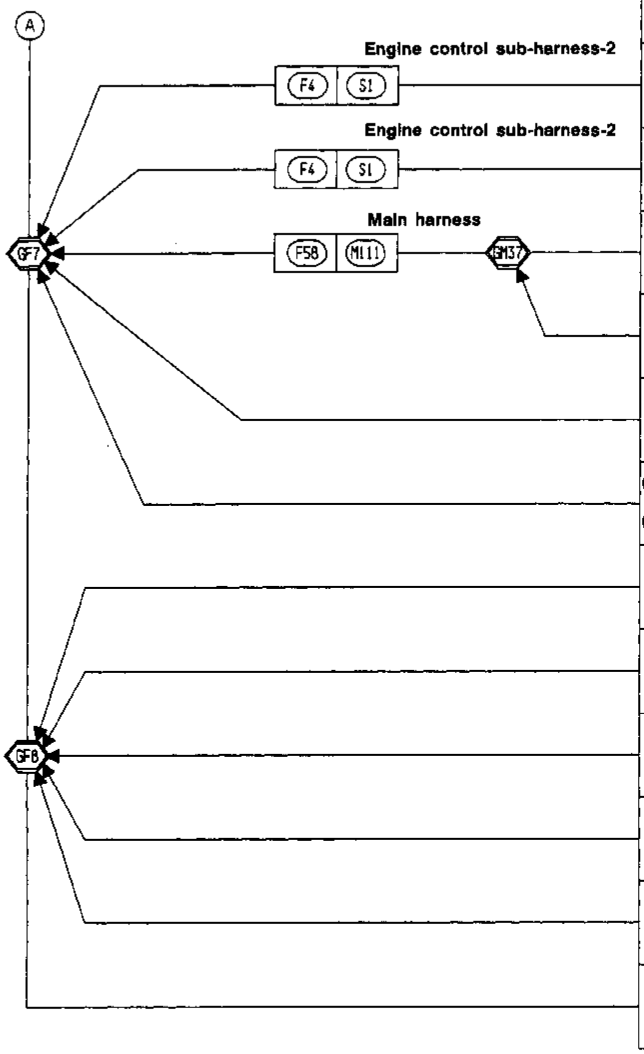
Engine control harness



CON-NECTOR NUMBER	CONNECT TO
M116 (No. 103)	Throttle control module
M116 (No. 107)	Throttle control module
F54 (No. 20)	ECM (ECCS control module)
F12	Power transistor unit LH
F2	Power transistor unit RH
F54 (No. 10)	ECM (ECCS control module)
F54 (No. 108)	ECM (ECCS control module)
F54 (No. 116)	ECM (ECCS control module)
F54 (No. 107)	ECM (ECCS control module)
M116 (No. 20)	Throttle control module
M116 (No. 10)	Throttle control module
F28	Secondary throttle position sensor (Shield wire)
S33	Active suspension pump
S33	Active suspension pump
F22	Sub-camshaft position sensor
B33 (No. 115)	Active suspension control unit
F54 (No. 50)	ECM (ECCS control module)

MEL981D

GROUND DISTRIBUTION



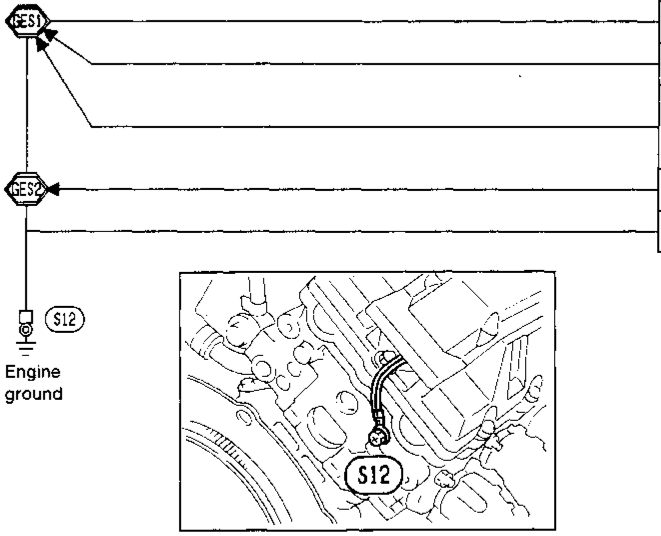
CON-NECTOR NUMBER	CONNECT TO
S2	Knock sensor LH (Shield wire)
S3	Knock sensor RH (Shield wire)
M2 (No. 15)	A/T control unit
M2 (No. 48)	A/T control unit
F17	Mass air flow sensor (Shield wire)
TC : F30 ET : F15	Throttle position sensor (Shield wire)
F9	Heated oxygen sensor LH (Shield wire)
F7	Heated oxygen sensor RH (Shield wire)
F22	Sub-camshaft position sensor (Shield wire)
F20	Camshaft position sensor (Shield wire)
F20	Camshaft position sensor
F54 (No. 60)	ECM (ECCS control module)

TC : Models with TCS
ET : Models without TCS

MEL982D

GROUND DISTRIBUTION

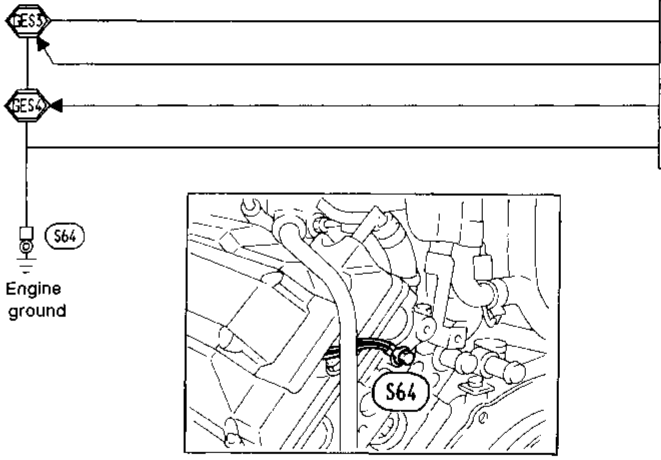
Sub-harness-5



CON-NECTOR NUMBER	CONNECT TO
S11	Ignition coil No. 2
S7	Ignition coil No. 6
S15	Check connector (Models with TCS)
S5	Ignition coil No. 8
S9	Ignition coil No. 4

MEL983D

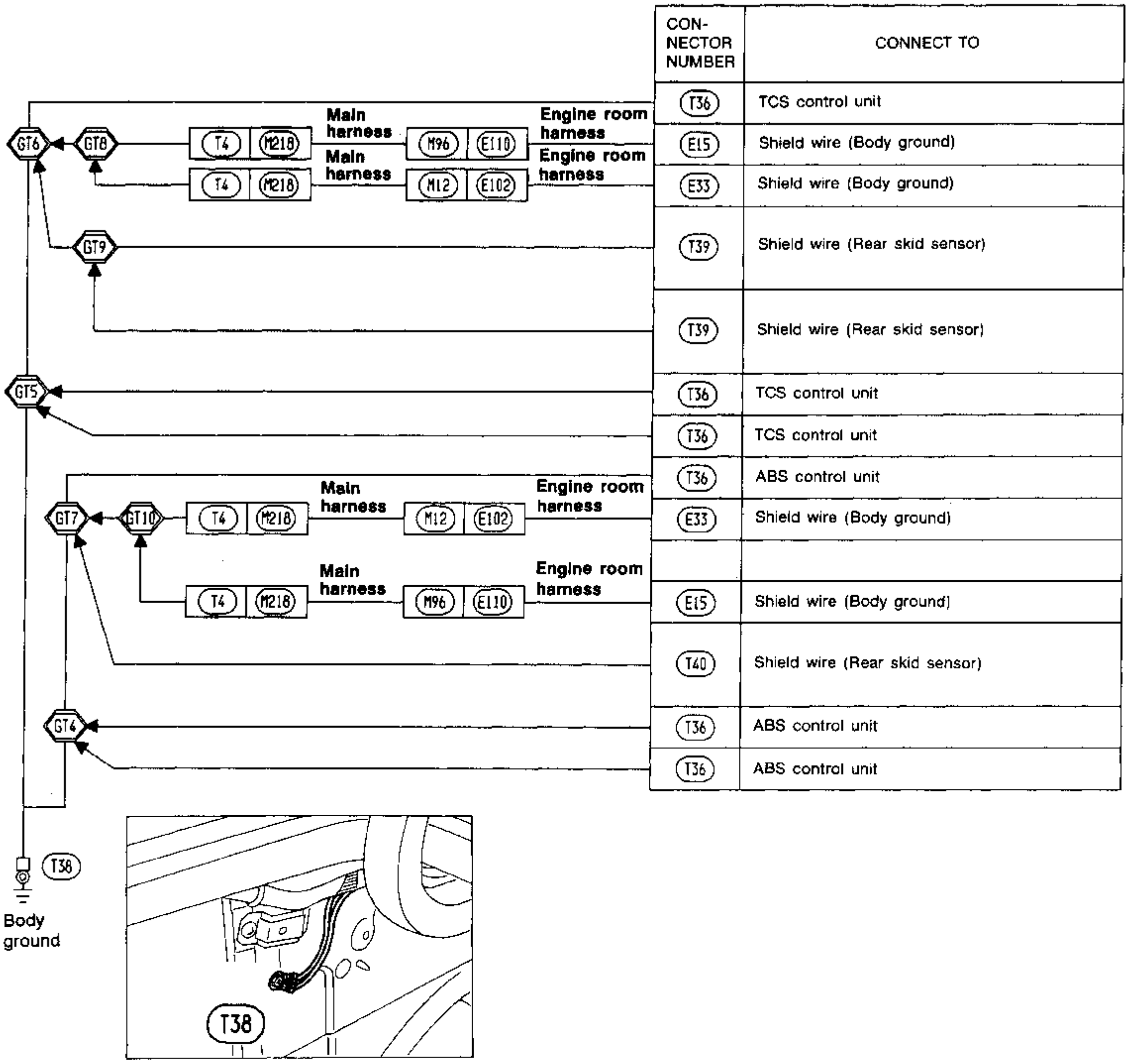
Sub-harness-4



CON-NECTOR NUMBER	CONNECT TO
S63	Ignition coil No. 1
S70	Ignition coil No. 5
S72	Ignition coil No. 7
S65	Ignition coil No. 3

MEL984D

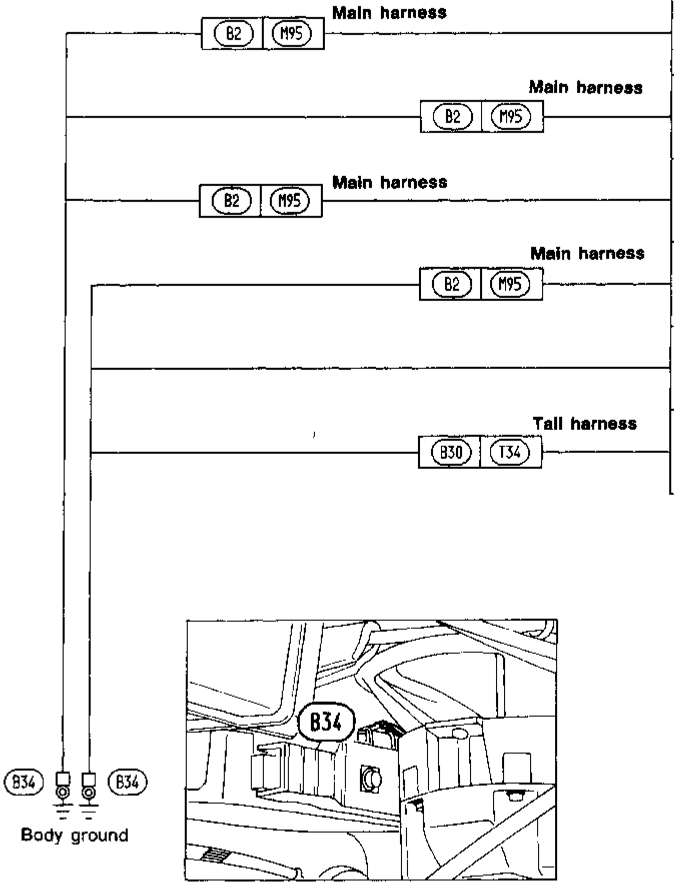
Tail harness



CON-NECTOR NUMBER	CONNECT TO
T36	TCS control unit
E15	Shield wire (Body ground)
E33	Shield wire (Body ground)
T39	Shield wire (Rear skid sensor)
T39	Shield wire (Rear skid sensor)
T36	TCS control unit
T36	TCS control unit
T36	ABS control unit
E33	Shield wire (Body ground)
E15	Shield wire (Body ground)
T40	Shield wire (Rear skid sensor)
T36	ABS control unit
T36	ABS control unit

MEL985D

Body harness



CON-NECTOR NUMBER	CONNECT TO
M223	Shield wire (Fore & aft G sensor)
M224	Shield wire (Lateral G sensor-1)
M225	Shield wire (Lateral G sensor-2)
M104	Shield wire (Front vertical G sensor)
B35	Shield wire (Rear RH vertical G sensor)
T37	Shield wire (Rear LH vertical G sensor)

MEL986D